

7, 8  
31

29  
24  
17  
27  
07  
13  
15  
25  
26  
27  
27  
06  
9  
03  
07  
69  
26  
19  
06  
14  
07  
8  
15  
30  
2  
70

# MANUFACTURERS RECORD

LIBRARY  
RECEIVED  
FEB 18 1915  
U.S. Department of Agriculture

A Weekly Newspaper Devoted to the Industrial, Financial, Railroad,  
Mining, Contract Engineering, Building, and General  
Business Interests of the South and Southwest

Vol. 67  
No. 7

ESTABLISHED 1882

\$4.00 Per Year  
Single Copy 15 Cents

Advantage in "Doing Now"  
Whatever Is To Be Done.

Strong Position of Southern  
Agriculture Regardless of  
Cotton.

Slag in Highway Construction.

National Cement Manufacturers.

BALTIMORE, FEBRUARY 18, 1915

# CLINCHFIELD COAL

**CLEAN**



**LUMPY**

**"NEVER SHORT OF CARS"**

**MINED BY**  
**Clinchfield Coal Corporation**  
**DANTE, VA.**

**SOLD BY**  
**Clinchfield Fuel Company**  
**SPARTANBURG, S. C.**

## THE BAILEY-LEBBY CO.

**CHARLESTON, S. C.**

AGENTS FOR  
**REVERE RUBBER CO.**  
**GIANT Seamless and Stitched RUBBER BELT**  
**FOUR ACE Friction Surface RUBBER BELT**  
**REVERE SPIRAL and RING PACKING**

We Carry a Complete Line of  
**REVERE GOODS**

Agents for DISSTON SAWS AND KNIVES, COLUMBIAN ROPE, EUREKA LATH YARN



**WELL ER-MADE**

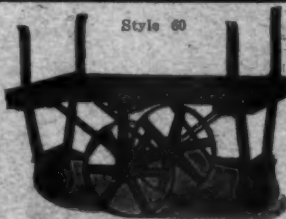
## Ore Handling Machinery

Belt Conveyors, Elevators, Screens, and Cars to Handle  
 All Classes of Coarse or Crushed Ore

**WELLER MFG. CO., Chicago**

Deverell, Spencer & Co.  
 Southeastern Sales Agents  
 Garrett Bldg., Baltimore

J. C. Van Arsdale & Co.  
 Southwestern Sales Agents  
 711 Main Street, Dallas



Style 80

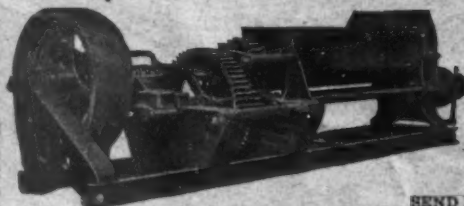
## ROLLER BEARING CARS and TRUCKS

OF ALL KINDS, FOR ALL PURPOSES  
**SWITCHES, TURNABLES**  
 Complete Industrial Railway Equipment  
 Write for Catalogue and Prices.  
**THE CHASE FOUNDRY & MFG. CO.**  
 COLUMBUS, OHIO

## BRICK MACHINERY

and  
**BRICK YARD SUPPLIES**  
**THE FERNHOLTZ BRICK MACHINERY CO.**  
 Boyle and Vandeventer Aves. ST. LOUIS, MO.

## Brick, Tile and Fire-Proofing Machinery



Large range of sizes and styles. Capacities from the smallest up to 150,000 bricks per day. Complete line of Automatic and Hand Cutter for all kinds of ware. Pug Mills, Disintegrators, Crushers and Brick-yard Supplies.

SEND FOR CATALOG

**E. M. FREESE & COMPANY,** 180 South Street, Galion, Ohio

## SALEM FOUNDRY & MACHINE WORKS

SALEM, VIRGINIA  
 Manufacturers of FLOUR AND CORN MILL MACHINERY, WOOD SPLIT AND IRON PULLEYS, RING OIL HANGERS, COUPLINGS, GEARINGS, COLLARS, Etc.  
 Shafting, Belting, Mill and Elevator Supplies in Stock  
 Roll Corrugating a Specialty

## Brick Machinery

Specially designed for working Southern Clays. Six sizes of machines. Six to one hundred and fifty thousand bricks per day. Hundreds in daily use. Over twenty-five years' experience.

**J. C. STEELE & SONS**  
 Statesville, N. C.





Y

lle

allas

KS

nt  
CO.

NG





# A Foster Superheater

Will Increase Efficiency  
of Your Steam Plant

The value of superheated steam for increasing efficiency and economy of steam engines, turbines, pumps, etc., is well known, and the ability of Foster Superheater has been proved beyond doubt.

Our Superheater will effect a considerable saving in even the most economical plant, and we will gladly explain to power plant owners why they should use it will tell them all about its many advantages and uses.

*Interesting printed matter  
promptly sent on request.*

**POWER SPECIALTY COMPANY**

111 Broadway, New York

Southern District Office, Brown-Marx Building

Birmingham, Ala.

## Every Time You Paint A Roof You Repair It!

If you knew you would have to spend \$180.00 every few years to repair your roof, would you buy it? Painting **is** repairing, and it will cost \$180.00 at the very lowest price to paint every 100 squares of roofing twice.

Add the cost of painting or graveling to the original cost of even a cheap roofing for ten years and it will make the cost-per-year of service much higher than the price of



## J-M Asbestos Roofing

J-M Asbestos Roofing is a little higher priced at the beginning than ordinary roofing—but the **first** cost is the **last** cost. It never needs paint, gravel or any other protection. In service on hundreds of buildings for more than 25 years without costing a cent for maintenance.

Made of Asbestos (rock) and Trinidad Lake Asphalt—both minerals. Literally a flexible **stone** roofing. Gives excellent fire protection. And is not affected by heat, cold, salt air or acid fumes.

Furnished in built-up form and in rolls. Suitable for all types of buildings.

We are also prepared to furnish J-M Regal Roofing which, although low in price, is the highest grade rubber roofing on the market.

*Write for specimen of Asbestos Rock and "J-M Asbestos Roofing Catalog"*

**H. W. JOHNS-MANVILLE COMPANY**

Manufacturers of Pipe Coverings; Packings; Mastic Flooring; Conduit; Slack Linings;  
Fireproof Paint; Fire Extinguishers; Fuses; Etc.

Akron	Cleveland	Houston	New Orleans	Salt Lake City
Albany	Columbus	Indianapolis	New York	San Francisco
Atlanta	Dallas	Kansas City	Omaha	Seattle
Baltimore	Dayton	Los Angeles	Philadelphia	Syracuse
Birmingham	Denver	Louisville	Pittsburgh	Toledo
Boston	Detroit	Memphis	Portland	Washington
Buffalo	Duluth	Milwaukee	Rochester	Wilkes-Barre
Chicago	Galveston	Minneapolis	St. Louis	Youngstown
Cincinnati	Houghton	Newark	St. Paul	

2325

## The Truth ABOUT Leather

IN a recent defensive circular to the auto trade, leather manufacturers define leather as "the skin or hide of an animal, or any part of such skin or hide, tanned or otherwise prepared for use."

But since whole hides are too thick for upholstery and the under fleshy portion must be split away from the grain side to make it thin enough, why should the two or three sheets into which the wastage is split be called leather? Although artificially coated and embossed to look like real grain leather, they are weak, spongy, and soft, crack, peel and rot.



**MOTOR QUALITY**  
For Automobiles  
**CRAFTSMAN QUALITY**  
For Furniture

is frankly artificial leather, guaranteed superior to coated splits. Its base is cotton fabric, twice as strong as the fleshy split. It is coated much heavier and embossed in the same way.

America's largest auto makers adopted it for upholstery because it outwears coated splits.

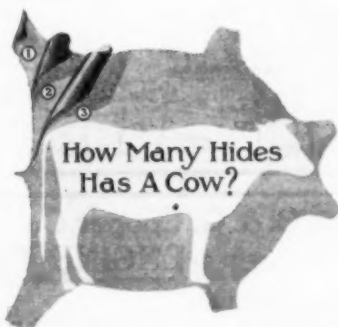
That foremost furniture maker, S. Karpen, says: "The cheap split leathers should be entirely eliminated in furniture upholstery."

Two-thirds of all "leather upholstery" is coated splits. Demand superior Fabrikoid on your car, buggy or furniture, and Fabrikoid Raynite tops, guaranteed one year against leaking.

**Small Sample Craftsman Quality Free  
or a Piece 18"x25", Postpaid, 50c.**

It is on sale by John Wanamaker, Philadelphia; McCreery & Co., Pittsburgh; J. & H. Phillips, Pittsburgh; John Shillito Co., Cincinnati; Stix-Baer-Fuller Co., St. Louis; The Palais Royal, Washington, D. C.; Stewart & Co., Baltimore, Md.; T. Eaton & Co., Ltd., Toronto and Winnipeg; Du Pont Fabrikoid Co., 90 West St., New York; Davison-Paxon-Stokes Co., Atlanta, Ga., and upholstery dealers generally.

**DU PONT FABRIKOID CO., Wilmington, Del.**  
Canadian Branch: Toronto, Ontario



## Keystone Explosives

### Quality

Nitro-  
Glycerine  
Dynamite  
Ammonia  
Dynamite

Low Freezing  
Dynamite

Non-Freezing  
Dynamite



### Efficiency

Quarry  
Powder

Gelatine  
Dynamite

"Farm Right"  
Dynamite

Permissible  
Powders

## Everything in High Explosives

The success of every blasting operation depends on the Quality and Efficiency of your explosive.

## We Specialize on Explosives

We will be pleased to submit prices and send you our HIGH EXPLOSIVE Catalogue.

**Keystone National Powder Company**  
EMPORIUM, PENNSYLVANIA

**ALLIS-CHALMERS**

MANUFACTURING COMPANY  
MILWAUKEE, WIS.

**Power and Electrical Machinery**

Steam Turbines  
Hydraulic Turbines  
Corliss Engines  
Gas Engines  
Electric Motors

Electric Generators  
Pumping Engines  
Air Compressors  
Condensing Apparatus  
Centrifugal Pumps

Oil Engines, Etc.

Combined contracts for complete power units with  
undivided responsibility insure satisfactory service

**Offices in All Principal Cities**

For all Canadian Business refer to Canadian Allis-Chalmers Co., Ltd., Toronto,  
Ontario, Canada.

FOREIGN REPRESENTATIVES: H. I. Keen, 732 Salisbury House, London Wall,  
E. C., London, Eng. Frank R. Perrot, 883 Hay St., Perth, W. Australia. Frank  
R. Perrot, 204 Clarence St., Sydney, N. S. W. Mark R. Lamb, Huerfanos 1157,  
Casilla 2653, Santiago, Chile.

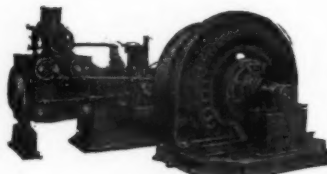
**DISTRICT OFFICES.**

Atlanta, Ga., 1104 Healy Bldg.  
Boston, Mass., 50 Congress St.  
Buffalo, N. Y., Ellicott Square Bldg.  
Chicago, Ill., People's Gas Bldg.  
Cincinnati, O., First National Bank Bldg.  
Cleveland, O., Schofield Bldg.  
Dallas, Tex., Sumter Bldg.  
Denver, Col., First National Bank Bldg.  
Detroit, Mich., Ford Bldg.  
Duluth, Minn., Alworth Bldg.  
El Paso, Tex., 1524 Upson Ave.  
Indianapolis, Ind., Traction Terminal Bldg.  
Kansas City, Mo., Waldheim Bldg.

Los Angeles, Cal., Title Insurance Bldg.  
Milwaukee, Wis., West Allis Works.  
Minneapolis, Minn., Corn Exchange Bldg.  
New Orleans, La., Maison Blanche Bldg.  
New York, N. Y., 30 Church St.  
Philadelphia, Pa., Pennsylvania Bldg.  
Pittsburgh, Pa., Frick Bldg.  
Portland, Ore., 92 First St.  
St. Louis, Mo., Railway Exchange Bldg.  
Salt Lake City, Utah, Kearns Bldg.  
San Francisco, Cal., Rialto Bldg.  
Seattle, Wash., 115 Jackson St.  
Toledo, O., Ohio Bldg.

**Ball Engines**

The choice of discriminating  
engineers and owners in all sec-  
tions of the country, because of  
their economy, reliability and all  
around faculty of making good.

**BUILT IN VARIOUS TYPES:**

Corliss and Single Valve  
Simple and Compound  
Condensing and Non-Condensing

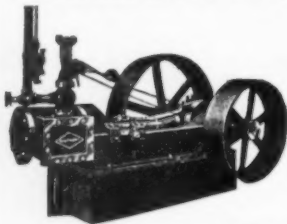
Ball Engine Company

Erie, Pa.

**SOUTHERN ENGINE & BOILER WORKS**

JACKSON, TENNESSEE

INCORPORATED 1884



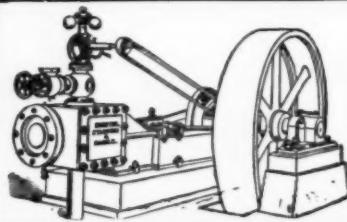
Manufacturers of Corliss, Automatic, Throttling,  
Hoisting and Dredging Engines

— ALSO —

A COMPLETE LINE OF BOILERS, SAWMILLS  
AND SAWMILL MACHINERY

WRITE FOR CATALOG

A Large Stock is Kept on Hand for Prompt Shipment

**Heavy Duty  
THROTTLING ENGINES**

We build a larger number of this type  
than anyone else in America. Shaft  
Governor Engines.

BOILERS—large finely equipped works

The Houston Stanwood & Gamble Co.  
CINCINNATI, OHIO

The C. & G. Cooper Co.

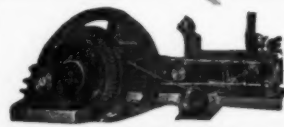
Mt. Vernon, Ohio

**ENGINE BUILDERS**

CORLISS ENGINES  
50 to 10,000 H. P.

81 Years of Experience

GAS ENGINES  
200 to 3000 H. P.

**Corliss Engines**

Boilers of All Styles and Sizes

MURRAY IRON WORKS COMPANY  
BURLINGTON, IOWA

INCORPORATED FEBRUARY 1, 1870

Engine on Exhibition in the Bourse, Philadelphia, Pa.

**GEARS**

Cut or Cast Teeth

Spur Bevel Miter  
Mortise Wheels

Chain Belting

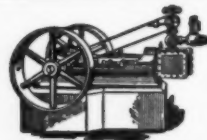
Pulleys—Bearings—Fly Wheels  
—Shafting—Screw and Belt  
Conveyors—Elevator Casings  
and Buckets—Rope Drives, Etc.

Send for Catalog No. 38

H. W. Caldwell & Son Co.

CHICAGO, 17th ST. and WESTERN AVE.

Branch Office, NEW YORK

**Schofield Engines  
GUARANTEED  
For Heavy Duty**

from FACTORY to YOU

If you are looking for an engine to withstand heavy  
duty—an engine that is well adapted for the saw  
mill, oil mill and the cotton gin, or wherever an engine  
can be used to advantage—investigate the Schofield Engine.

**Long Wear—Less Steam**

In wearing qualities and the economy of steam, the Schofield Engine is unsur-  
passed. Sixty-seven years of experience has enabled us to produce the  
highest quality and type of engine—and one we can fully guarantee.

All sizes, Center Crank type—12 horse power to 100 horse power—  
side crank type 50 horse power to 150 horse power.

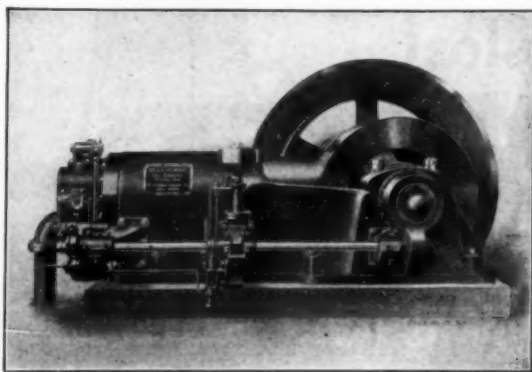
We also manufacture boilers, tanks, towers, smoke stacks, saw mills,  
and all kinds of machinery—mill supplies, pipe, galvanized roofing, etc.

Write today for prices and catalogue containing illustrations  
and specifications.

Schofield Iron Works, - Macon, Ga.

TANKS and TOWERS,  
BOILERS and ENGINES  
a Specialty.





## "De La Vergne" Crude Oil Engines

furnish power for less cost than any other type of prime mover. They operate on the cheapest grades of crude oil, which can be bought from two to three cents per gallon.

Guaranteed to operate on any grade of commercial fuel or crude oil produced in the United States or Mexico, and to produce 16 B. H. P. hours per gallon of fuel.

Adapted for every kind of power requirements.  
65 to 800 B. H. P.

Send for our New Bulletin No. 138.

**DE LA VERGNE MACHINE CO.**

1107 East 138th Street

NEW YORK CITY

Also Builders of Ice and Refrigerating Machinery.

## BOLINDERS OIL ENGINES

3 to 500 UNITS

MARINE AND STATIONARY

Also Pumping Sets, Electric Lighting Sets and Winch Sets

USE CHEAP FUEL OILS

Over 10,000 in Actual Use

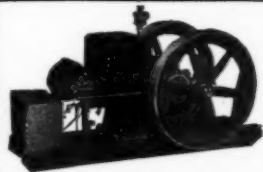
BOLINDERS COMPANY, 30 Church Street, NEW YORK

## "EVERYTHING FOR A GAS PLANT"

Gas Holders, coal gas or water gas apparatus, valves, tanks, and all auxiliary equipment.

**The Western Gas Construction Company**

FORT WAYNE, INDIANA



Contractors and all other Gas Power Users should become familiar with our excellent facilities for supplying the better class of goods at reasonable prices.

Our lines comprise Gas Engines (all styles and sizes), Diaphragm and Centrifugal Pumping Outfits, Clutches, Hoist Drums, Etc.

**AFFILIATED MANUFACTURERS CO.**

Main Office: MILWAUKEE

Branches: Cincinnati and Los Angeles



When using

## Carbon Lamps

Send us orders for Renewed Types

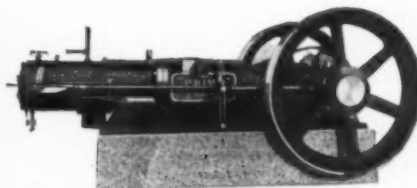
Guaranteed to Be Satisfactory

**BOSTON-ECONOMY LAMP DIVISION**

NATIONAL LAMP WORKS OF GENERAL ELECTRIC CO.

128 Maple St., DANVERS, MASS.

## The "PRIMM" CRUDE OR FUEL OIL ENGINE



**R**UNS on any fuel that any internal engine will run on successfully and on fuel that most manufacturers say is impossible.

No valves, gears, slideshafts, cams, hot bulbs or electrical sparkers for trouble makers, and starts on the fuel which it runs. The height of simplicity and efficiency for any purpose. Write for name of nearest installation and full information. Is not new and in the experimental stage; has been on the market for eight years.

THE POWER MFG. CO.

Cor. Greenlawn Ave. and C. & E. R. R.

LIMA, OHIO

## ALUMINUM

Feeder Cable

Bare and Insulated

Transmission Cable

Aluminum-Steel Reinforced

FOR

EXCEPTIONALLY LONG SPANS

**ALUMINUM CO. OF AMERICA**

PITTSBURGH, PA.

WASHINGTON

CHICAGO

KANSAS CITY

## Benjamin Fixtures Sacrificed

Two, three and four-light Benjamin lighting fixtures, brush brass finished, all wired and including sockets, in stock for immediate delivery at \$1.00 each.

Write for sample fixtures if you think you can use a quantity of them.

**Lee Electric Company, Baltimore, Md.**



**The Griffith & Wedge Co.**

Established 1840

ZANESVILLE, OHIO, U. S. A.

Manufacturers of

**THE OHIO CORLISS ENGINE**

Send for Catalogue.

## HERE'S LIGHT FOR YOU

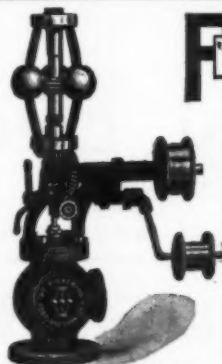
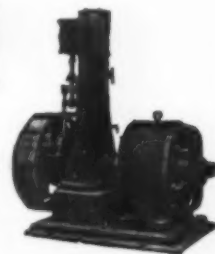
No matter where you live. Light your home or factory with our small direct connected

**GENERATING SETS**

Built Compact and Sturdy. All sizes from 4 to 25 K. W. Get full details.

**THE TRIUMPH ELECTRIC COMPANY**

CINCINNATI, OHIO



**PICKERING**  
"THE GOVERNOR WITHOUT JOINTS"

Because of directness in Action the Pickering always gives greatest efficiency, not only when first installed, but after long and continuous duty, for there cannot be any lost motion from wear, and is the only Governor without joints.

Rugged and Reliable for  
SAW MILL DUTY

Close in Regulation for  
ELECTRIC LIGHT SERVICE

WIDE RANGE SPEED CHANGER  
AUTOMATIC SAFETY STOP

**The PICKERING GOVERNOR COMPANY**  
PORTLAND, CONNECTICUT, U.S.A.





## G-E Motors Installed in a Large Majority of All-Important 1914 Extensions or New Projects

The 1915 annual review number of the Textile Manufacturers' Journal gives a list of new mills, mills in process and mills completed during 1914.

A large majority of these mills have installed G-E equipment.

The G-E Motors now in use in textile mills are numbered by the tens of thousands, and at the present rate of increase their horse-power capacity will soon be numbered by the hundred thousand.

The great popularity of these special textile motors, as shown by the rapid increase in their sales from year to year, enables this company to give the customer all the benefits of quantity buying, material testing, large scale manufacturing made exact by special jigs and templates as well as careful testing by experts.

The design of these motors shows the constant consultation of their designers with the Mill Power salesmen of the General Electric Company—men who are thoroughly familiar with textile mill practice. The operating records of all our special textile mill motors, which are open for the inspection of prospective customers, have resulted in greatly increased sales this year.

Bulletin No. 48016, just off the press, shows G-E motor drives in prominent textile mills throughout this country. Write our nearest office for your copy.

## General Electric Company

Atlanta, Ga.  
Baltimore, Md.  
Birmingham, Ala.  
Boston, Mass.  
Buffalo, N. Y.  
Butte, Mont.  
Charleston, W. Va.  
Charlotte, N. C.  
Chattanooga, Tenn.  
Chicago, Ill.  
Cincinnati, Ohio

Cleveland, Ohio  
Columbus, Ohio  
Dayton, Ohio  
Denver, Col.  
Des Moines, Iowa  
Detroit, Mich.  
(Office of Agent)  
Duluth, Minn.  
Elmira, N. Y.  
Erie, Pa.  
Fort Wayne, Ind.  
Indianapolis, Ind.

General Office: Schenectady, N. Y.  
ADDRESS NEAREST OFFICE

Jacksonville, Fla.  
Joplin, Mo.  
Kansas City, Mo.  
Knoxville, Tenn.



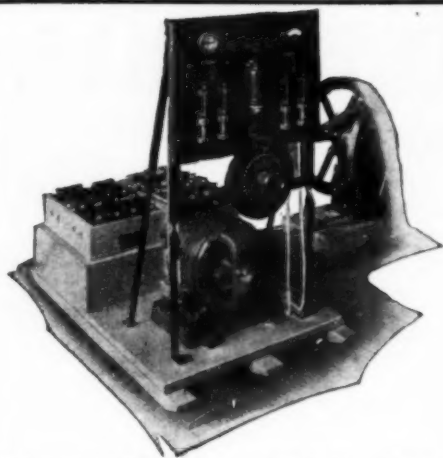
Los Angeles, Cal.  
Louisville, Ky.  
Memphis, Tenn.  
Milwaukee, Wis.

Minneapolis, Minn.  
Nashville, Tenn.  
New Haven, Conn.  
New Orleans, La.  
New York, N. Y.  
Niagara Falls, N. Y.  
Omaha, Neb.  
Philadelphia, Pa.  
Pittsburg, Pa.  
Portland, Ore.  
Providence, R. I.  
Richmond, Va.

Rochester, N. Y.  
St. Louis, Mo.  
Salt Lake City, Utah  
San Francisco, Cal.  
Schenectady, N. Y.  
Seattle, Wash.  
Spokane, Wash.  
Springfield, Mass.  
Syracuse, N. Y.  
Toledo, Ohio  
Washington, D. C.  
Youngstown, Ohio

For Texas, Oklahoma and Arizona business refer to Southwest General Electric Company (formerly Hobson Electric Co.)—Dallas, El Paso, Houston and Oklahoma City. For Canadian business refer to Canadian General Electric Company, Ltd., Toronto, Ont.





"Hyrap-Exide" Battery and Switchboard Unit, with generator in place, connected to engine, making a complete electric plant.

## Isolated Electric Lighting Plants

Here are simple, compact and perfected electric plant units which make it possible for every farm, country home, hotel, store, etc., not near a Central Station, to easily have its own electric lighting plant at a small expense.

These Units consist of a "Hyrap-Exide" Battery of 16 cells (charged) assembled in rubber jars and a switchboard, all mounted on a single skid as shown. These Units can be quickly and easily installed, are shipped in one box to be readily handled and can be operated by anyone. The addition of a generator and engine makes a complete electric plant.

Write our nearest office for catalogues and full information.

### THE ELECTRIC STORAGE BATTERY CO.

1888

PHILADELPHIA, PA.

1915

New York  
BostonChicago  
St. LouisCleveland  
AtlantaDenver  
DetroitPittsburgh  
WashingtonRochester  
Los AngelesSan Francisco  
SeattlePortland, Ore.  
Toronto

Make your own  
**OXYGEN**  
and **HYDROGEN**

by the

**I. O. C.**  
**SYSTEM**

and **SAVE MONEY**

The operation of this system is automatic, safe, simple and free from upkeep expense.



I. O. C. System Plant of 56 Cells in Double Row.

Numerous I. O. C. System Installations of from 6 to 460 Generators each installed within the past three years.

Write for full particulars.

### INTERNATIONAL OXYGEN COMPANY

General Sales Office: 115 Broadway, NEW YORK

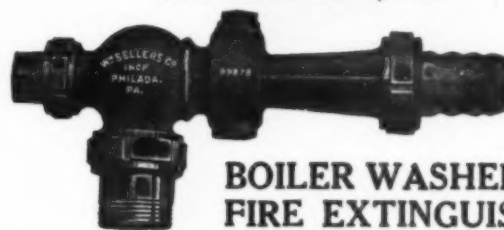
PITTSBURGH, PA., Park Bldg.

Works: NEWARK, N. J.

PARIS, FRANCE, 40 Rue Laffitte

## Wm. Sellers & Co., Inc.

PHILADELPHIA, PA.



**BOILER WASHER and  
FIRE EXTINGUISHER**

Can be attached to Locomotive.

**SELF-ACTING INJECTOR** The only injector for Lumber Mills and Logging Roads

For Flexible Electric Conductors  
use



## Western Electric Lamp and Portable Cords

All commercial sizes and for all purposes.

Get prices from our nearest house.

### Western Electric Company

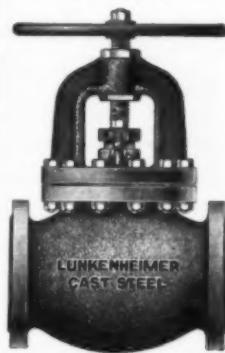
Manufacturers of the 8,000,000 "Bell" Telephones

New York	Atlanta	Chicago	Kansas City	San Francisco
Buffalo	Richmond	Milwaukee	Omaha	Oakland
Philadelphia	Savannah	Indianapolis	Oklahoma City	Los Angeles
Boston	New Orleans	Cleveland	Minneapolis	Seattle
Pittsburgh	Houston	Cincinnati	St. Paul	Portland
St. Louis	Dallas	Denver	Salt Lake City	

**EQUIPMENT FOR EVERY ELECTRICAL NEED**

Member Society for Electrical Development. "Do it Electrically"

## LUNKENHEIMER CAST STEEL VALVES



For superheated steam and high pressures.

Made in a number of combinations of materials to suit various conditions of service.

Lunkenheim Cast Steel is made in closed crucibles, and is thereby protected from the deteriorating action of furnace gases. It contains less than .05 per cent. of either phosphorus or sulphur, and has a tensile strength of about 80,000 pounds per square inch, with a safe elastic limit and excellent elongation. Castings are solid and free from blow-holes, and being annealed, the metal has a fine grain, which is so essential to strong steel.

The extensive line of Lunkenheim Cast Steel Valves includes Globe, Angle, Gate, Non-return Boiler Stop, Balanced Throttle Valves, etc., for working steam pressures ranging up to 350 pounds, and for temperatures up to 800° Fahrenheit.

Specify **Lunkenheim** when ordering from your local dealer and *insist* on getting the genuine.

### THE LUNKENHEIMER CO.

—"QUALITY"—

Largest Manufacturers of High Grade Engineering Specialties in the World.

CINCINNATI, OHIO, U. S. A.

New York  
15-6210

Chicago

Boston

London

## BOILER USERS IT'S THE HEATING SURFACE OF VOGT WATER TUBE BOILER



that gives you such quick steam. The heating surface consists of three rows or banks of horizontally inclined tubes, connected by cross drums, and one vertical bank of tubes in rear of boiler connecting the steam drums with the mud drum.

This and other meritorious features will be gladly explained. Let us send catalogue.

**Henry Vogt Machine Company**  
Louisville, Ky.

### HARTLEY BOILER WORKS BUILDERS OF HIGH GRADE BOILERS

Stand Pipes, Self-Supporting Stacks, Tanks, Towers, all kinds of Structural and Plate Iron Work, Boiler Fronts, Grate Bars, all kinds of Castings.

MONTGOMERY, ALA.

### THE CASEY-HEDGES CO., Chattanooga, Tenn.

Water Tube  
Marine  
Return Tubular

## BOILERS

Special Plate and Tank Work. Offices—No. 443 Boliver Street, New Orleans, La.; Praetorian Bldg., Dallas, Texas. Main Offices and Works—Chattanooga, Tenn.



ESTABLISHED 1864

**E. KEELER CO.**  
WILLIAMSPORT, PA.

Our product is the result of 50 years  
of honest boiler building

WASHINGTON  
HUNTINGTON, W. VA.

DALLAS  
NEW ORLEANS

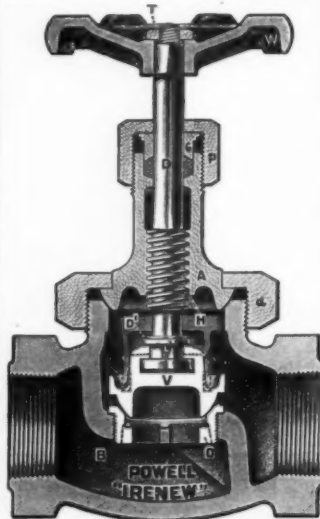
PITTSBURG  
RICHMOND

Oldest Valve  
Manufacturers  
in the West

## POWELL VALVES

(Especially the "White Star" Valve)

Five Points of Efficiency Combined in  
the New Powell Iron Body "IRENEW"  
Globe Valve



1. Body is cast of a select grade of iron, a uniform dense metal of great tensile strength.
2. Disc and Seat Ring of White "POWELLIUM" Non-Corrosive metal applicable to most temperatures of superheated steam.
3. Stem, Bonnet and Disc Holder, etc., are cast of the best steam bronze; Stem can be repacked under pressure.
4. All working parts made to gauge and are interchangeable. They are acknowledged the most serviceable and economical valves made.
5. Note.—Knobby non-heating hand-wheel for a firm, cool grip.

Ask your dealer for Powell Valves, or write us.

THE W. M. POWELL CO.



DEPENDABLE ENGINEERING SPECIALTIES  
CINCINNATI, O.

## "Mt. Savage" Fire Brick

BRANDS: "MT. SAVAGE" "REFRACTO"  
"M. S. A." "CARBURETER"

Capacity 20,000,000 Per Year

**Union Mining Co.**

OFFICE AND WORKS:  
MT. SAVAGE MD.

LOUISVILLE FIRE BRICK WORKS  
INCORPORATED

## HIGH-GRADE FIRE BRICKS

P. O. HIGHLAND PARK, KY.

CANNING MACHINERY—Cans, Cases, Labels  
A. K. ROBINS & COMPANY 116 Market Space, Baltimore, Md.

## Valk & Murdoch Iron Works

Marine and Stationary Boilers, Phosphate and Fertilizer Machinery

SHEET IRON WORK IRON AND BRASS CASTING

East End of Hazel Street

CHARLESTON, SOUTH CAROLINA

### LOOKOUT BOILER & MFG. CO.

MANUFACTURERS OF  
PORTABLE AND HORIZONTAL TUBULAR  
BOILERS  
STACKS, CASTINGS, TANK, Etc.  
CHATTANOOGA, TENN.

### THE WALSH & WEIDNER BOILER CO.

MANUFACTURERS OF HIGH-GRADE  
BOILERS  
CHATTANOOGA, TENN.  
Write us for Prices before placing your order

## BOILERS TANKS STACKS

Pumps, Heaters, Injectors, Engine Supplies, and Repairs for Mills, Hotels,  
Public Works. Try

LOMBARD IRON WORKS - AUGUSTA, GA.

## THE BABCOCK & WILCOX COMPANY

85 Liberty Street, NEW YORK

BABCOCK & WILCOX—STIRLING—RUST

## WATER TUBE STEAM BOILERS

STEAM SUPERHEATERS

MECHANICAL STOKERS

WORKS—BAYONNE, N. J.

BARBERTON, OHIO

—BRANCH OFFICES—

Atlanta.....Candler Building  
Boston.....35 Federal St.  
Chicago.....Marquette Building  
Cincinnati.....Traction Building

Cleveland.....New England Building  
Denver.....435 Seventeenth St.  
Havana, Cuba.....116½ Calle de la Habana  
Los Angeles.....American Bank Building

New Orleans.....Shubert Arcade  
Philadelphia.....North American Building  
Pittsburgh.....Farmers' Deposit Bank Building

Portland, Ore.....Wells-Fargo Building  
Salt Lake City.....313 Atlas Block  
San Francisco.....99 First Street  
Seattle.....Mutual Life Building



# Power Plant Owners Read About This Saving in Coal

The Yolande Coal & Coke Co., Birmingham, Ala., writes as follows:

"After having them in use for more than a year are pleased to report: Our No. 1 Mine of five boilers at Yolande, totally equipped, with following results:

Total cost of investment, \$833.00.

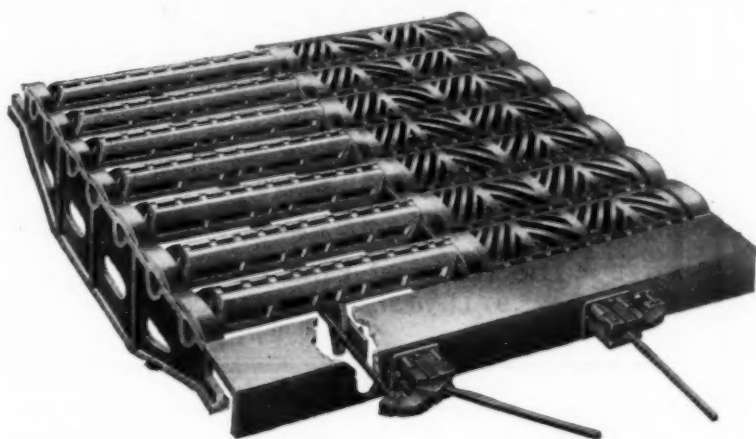
Steam increased from insufficient to pull the bottom of the mine without shutting down a portion of the washer, to ample supply for all purposes.

Labor for both firing and cleaning reduced to the minimum.

Saved in four months over common bars, \$700.00, as per following test:

COMMON BARS.			THOMAS BARS.		
	Coal Burned.	Coal Mined.		Coal Burned.	Coal Mined.
May, 1913.....	812 tons	7,276 tons	September, 1913.....	722 tons	7,457 tons
June, 1913.....	768 tons	7,013 tons	October, 1913.....	769 tons	7,910 tons
July, 1913.....	722 tons	6,167 tons	November, 1913.....	697 tons	7,935 tons
August, 1913.....	740 tons	6,751 tons	December, 1913.....	690 tons	7,568 tons
Four months.....	3,042 tons	27,207 tons	Four months.....	2,878 tons	30,870 tons
	Fuel Cost per ton, .14			Fuel Cost per ton, .117	

We believe that the above results can be obtained by any user of Thomas Grate Bars in connection with YOLANDE steam coal, either mine run, washed nut or screened form. YOLANDE is the highest carbon coal in the district with the lowest volatile, therefore, with the even distribution of air that your bars allow, will increase the efficiency and give an exceptionally economical operating cost. Our coal analyzes: Fixed carbon 67%, and Volatile 23%, and burning on Thomas Grate Bars will produce almost a smokeless stack."



Put your plant on an efficiency basis.  
Save labor and coal. No plant too  
small or too large to use them to  
advantage.

Write today for illustrated printed matter  
and full details.

**Thomas Grate Bar Co.**  
Birmingham, Alabama

## UNIVERSAL MACHINE CO., BALTIMORE, MD.

Formerly The Universal Telegraphic Company

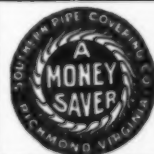
INDUSTRIAL BUILDING

Mechanical and Electrical Engineers

Designers and Manufacturing Machinists

Company Invites Correspondence

Estimates Cheerfully Submitted



## ASBESTOS

PIPE COVERING, PACKING AND ROOFING

Contract Work a Specialty

SOUTHERN ASBESTOS MFG. CO., Inc.

Successors to Southern Pipe Covering Co.

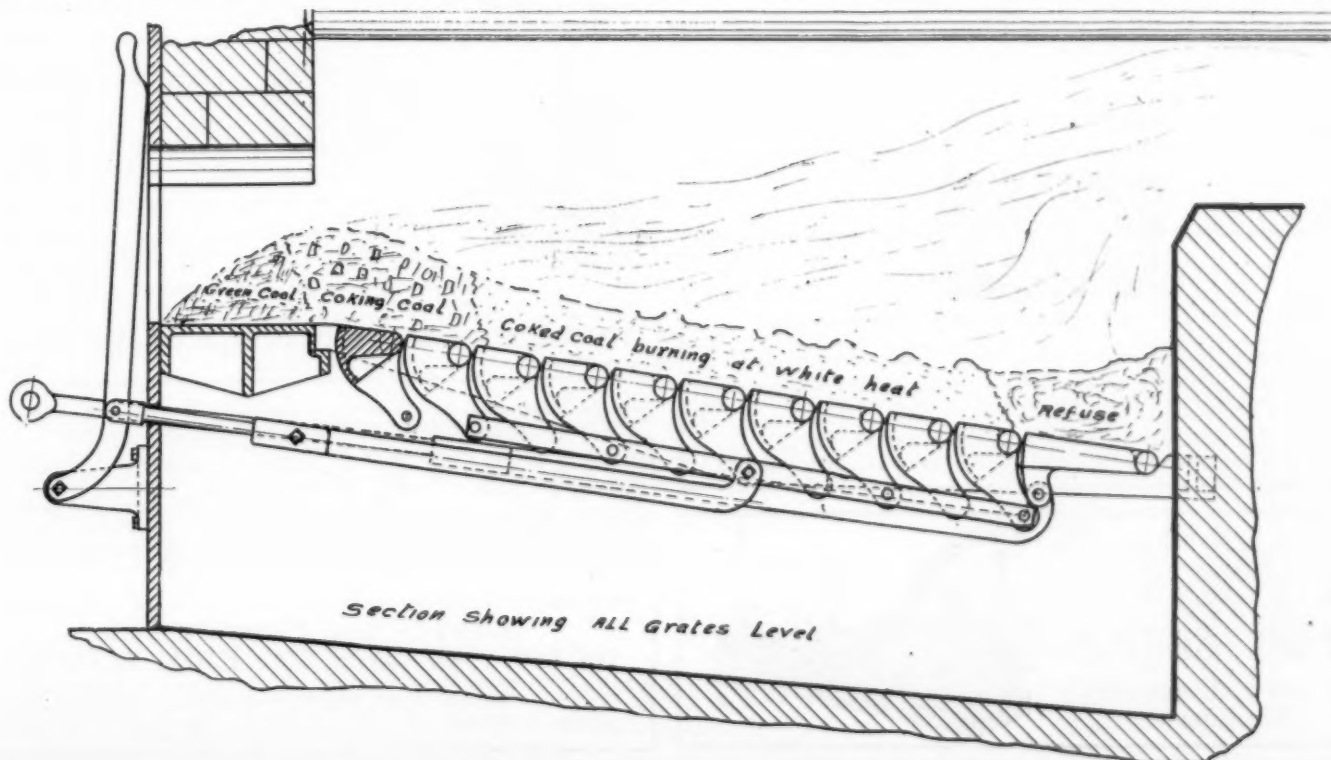
RICHMOND, VA.

## IF YOU WANT TO REDUCE YOUR COAL COSTS

Find out all of the advantages and economies of the Huber Hand Stoker. Write today for complete data.

HUBER GRATE BAR & STOKING COMPANY

1114-16 East Monument Street, BALTIMORE, MD.



## YORK CO

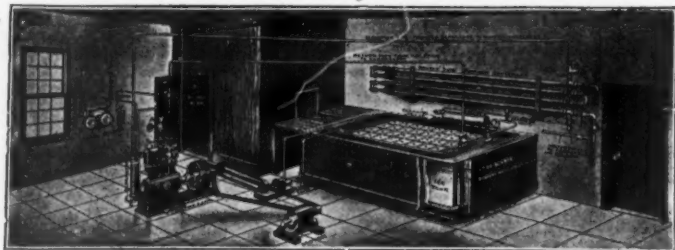
Products have not won general approval in a day or a year, nor through any of our claims or by advertising, but through satisfactory results produced in actual service. Letters of recommendation and appreciation, which have come to us unsolicited, show that our installations are doing all, and in many cases more than we guaranteed to do. This, and our reputation for fair dealing, have combined to win favor for York products wherever used. We make the various parts needed to equip an Ice-Making or Refrigerating Plant, in our own Factory. Our men are skilled in the production of this class of apparatus—we make nothing else. Our modern Plant and Equipment is the largest in this field. Hence, your choice, if you want the best, must eventually narrow down to

## YORK CO

**YORK MANUFACTURING CO.**

(Largest Ice Machine Manufacturers in the World)

**YORK, PA.**



### REMINGTON ONE-TON ICE PLANT

Many of these machines are in operation in the SOUTH in Mills and other Manufacturing Establishments to supply ICE for local requirements. They can be run from line shaft at small expense, and will soon pay first cost. Machines of any capacity for MAKING ICE or for the COOLING OF COLD STORAGE ROOMS, LIQUIDS OR DRINKING WATER. Over 20 years on the market. Illustrated Catalogue and Reference List upon request.

**REMINGTON MACHINE CO.**

**WILMINGTON, DEL.**



### Safety First—Service Always

The business we are particularly proud of is our repeat orders—orders for additional equipment from old customers who are already operating one or more "H. & C. Safety" Compressors.

Our "come-back" business is a big business in itself and positively proves we have given a big value.

Write for an estimate on your requirements.

**THE HUETTEMAN & CRAMER CO.**

Refrigerating and Ice Making Machines,

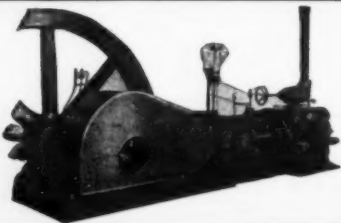
**Detroit, Michigan**

### THE VILTER MFG. CO.

832 Clinton Street  
MILWAUKEE, WIS.

### Corliss Engines

Ice and Refrigerating  
Machinery

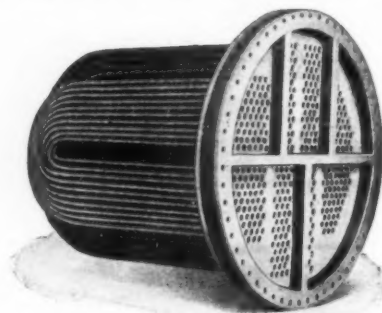


## Hot Water

If the supply of hot water needed in your factory, mill or power plant is insufficient, if it is not absolutely dependable, if it requires too much steam, you need

## NATIONAL

### Water and Storage Heaters



We build apparatus for any heating and storage requirements—in vertical and horizontal forms.

Send for our new book of plans.

**The National Pipe Bending Co.**

97 Lloyd St., New Haven, Conn.

46-82

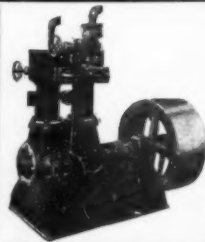


### THE OTIS HEATER SHIPPED ON ITS MERITS

Guaranteed to heat your feed water to 200 degrees or more with the proper quantity of exhaust steam. Its brass tubes are all suspended from the top, enabling them to expand and contract with perfect freedom. We guarantee that the tubes will not become loose (as they do in some other types). All heaters are tested at 200 lbs. hydrostatic pressure before shipment.

Write for Illustrated Catalogues.

**The Stewart Heater Co. 3 Norfolk Ave. Buffalo, N. Y.**



Sizes from 1 to 10 tons.

Positively the most simple, the strongest and most modern type of Small Refrigerating Machines. Improved by simplicity of construction and operation right up to October, 1914.

### This Ice Machine

will save you from  $\frac{1}{2}$  to  $\frac{3}{4}$  of your ice bill, depending on the quantity of ice you buy, and not on the kind of business you do. We'll prove it if you wish.

Write for circular and prices.

**The Portsmouth Engine Co.**  
PORTSMOUTH, OHIO

### INTERNATIONAL FILTER CO.

FILTERS

CHICAGO

SOFTENERS

## WATER

## SOFTENING OR FILTRATION

FOR BOILER FEED AND ALL INDUSTRIAL USES

WM B SCAIFE & SONS CO.,

PITTSBURGH, PA.

### Gravity and Pressure Filters

**THE NEW YORK CONTINENTAL JEWELL FILTRATION CO.**

111 Monroe St., CHICAGO

15 Broad St., NEW YORK

OWNERS OF THE NEGATIVE HEAD FILTER PATENTS

LICENSEES: PITTSBURGH FILTER MFG. CO. NORWOOD ENGINEERING CO.  
ROBERTS FILTER MFG. CO.



**GALENA-SIGNAL OIL CO.**

FRANKLIN, PA., U. S. A.

**Leading Railway Lubricating and  
Illuminating Oils of America**GALENA COACH, ENGINE and CAR OILS, and SIBLEY'S  
PERFECTION VALVE and SIGNAL OILS  
are standard the world over**ELECTRIC RAILWAY LUBRICATION A SPECIALTY**

Guarantee Cost

S. A. MEGEATH, President

Expert Service

**GULF REFINING CO.**

REFINERS OF

Oklahoma and Texas

**PETROLEUM**

HIGH GRADE

Engine Gasoline  
Kerosene  
Gas OilPainters' Naphtha  
Stove Gasoline  
Fuel Oil

Paving and Roofing Asphalt

**OUR KEROSENE AND GASOLINE**IS MANUFACTURED FROM  
HIGH GRADE OKLAHOMA CRUDE OIL**LUBRICATING OILS**CYLINDER ENGINE CORDAGE  
HIGH VISCOSITY LOW COLD TEST**We make a Specialty of Heavy Oils  
of Asphaltum Base for  
Oiling Roads**GENERAL SALES OFFICE  
PITTSBURG, PA., U. S. A.NEW YORK  
NEW ORLEANSDistrict Sales Offices  
PHILADELPHIA  
HOUSTON  
ATLANTA, GA.BOSTON  
TAMPA**MAIN BEARING  
LUBRICATION**

Main-bearing lubrication can be secured with the greatest efficiency and at the utmost economy with Albany Grease. We recommend the Albany hand-made cup as shown in the illustration for use on this bearing and other large bearings. To install this cup all that is necessary is to set it in position in the bearing box. Many of these cups have been in service a long while and are still giving perfect satisfaction, keeping big bearings working cool and easy. It is not absolutely necessary that the Albany hand-made cup be used on main bearings to secure good results, as Albany Grease can be used in any make or kind of cup. Use

**ALBANY GREASE**

on your main bearings and every other bearing on your engines, motors, pumps, compressors, line shafting and all other machinery in your plant—all the time. You will secure perfect lubrication service. Why not start using Albany Grease now? We will be glad to send you a quantity of Albany Grease and cup, at no cost to you, for trial. Our book, "Friction," will also be sent. Why not send today, while you are thinking about it?

**Your Dealer Sells Albany Grease—If Not, Order Direct****ALBANY LUBRICATING CO.**

ADAM COOK'S SONS, Props.

708-710 Washington St., NEW YORK

Established 1868

**ROBSOCO OILS**

Noted universally for their lubricating efficiency.

Used by the United States Navy and large concerns demanding perfect results.

Manufactured by

**WM. C. ROBINSON & SON COMPANY**

Baltimore, Md., U. S. A.

Refiners of AUTOLINE OIL for All Types of Motors

Branches

Charlotte, Savannah, New Orleans, La., Newton, and 16 Other Cities

**Efficient Operation of Steam Turbine Installations**  
is obtained by using**ALBERGER SPIROFLO  
SURFACE CONDENSERS**

in conjunction with Alberger Centrifugal Air Pumps or Alberger Rotative Dry Air Pumps, because of the high vacuum produced and the relatively low operating power required.

*An equipment for every service.***ALBERGER PUMP & CONDENSER COMPANY** 140 Cedar St., NEW YORK

Atlanta Boston Chicago St. Louis Pittsburgh San Francisco New Orleans





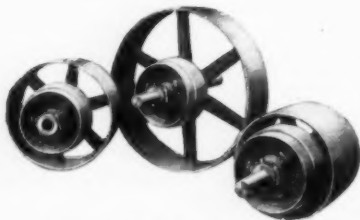
## Just Off the Press

**OUR 1915  
CATALOG**

You will find the new catalog the most helpful and instructive book ever published on Friction Clutches.

Send for a  
Free Copy

**THE MOORE &  
WHITE COMPANY**  
Philadelphia, U. S. A.



Friction Clutch Pulleys for 2500 R. P. M.

Proposals advertised in the Manufacturers Record bring good results.



## Oilers

Made of Steel with brazed joints  
and seams. For All Purposes.  
No Leaks.

GUARANTEED.

For illustrated booklet write

**The P. Wall  
Mfg. Supply Company**  
Allegheny, Pa.

Also makers of Everlasting Steel

## Torches



## GILBERT WOOD SPLIT PULLEYS

MANUFACTURED BY

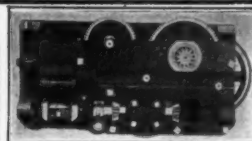
**SAGINAW MANUFACTURING CO.**

Saginaw, Michigan, U. S. A.

New York Branch, 88 Warren St.

Chicago Branch, 105-109 N. Canal St.

Sales Agencies in all the Principal Cities.



## The Apron of Greaves-Klusman Heavy Quick-Change 15-Inch Engine Lathe

Is of double-box form. Gears are cut from Steel Forgings. Feeds are operated by steel friction gears with cast iron frictional surfaces, fitted and securely bolted to same, and feeds are reversed in apron. Feed rod is supported at both ends of apron, maintaining alignment in all positions.

THE GREAVES-KLUSMAN TOOL CO., Cincinnati, Ohio, U. S. A.



## T. B. WOODS SONS CO., CHAMBERSBURG, PA.

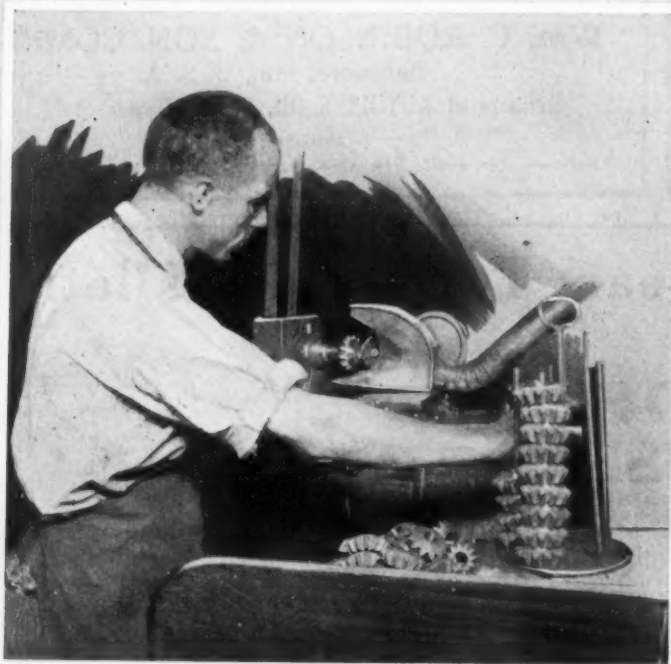
Manufacturing Engineers

### Modern and Approved Appliances for the Transmission of Power

Upon request, our new and complete Catalog No. 55 will be mailed promptly to any user of power.



## Just Any Grinding Wheel Wouldn't Do for This Job



The work is grinding hardened nickel-steel pinions. They had to have the *Right Wheel in the Right Place*.—Just any grinding wheel wouldn't do. They had to have just the *Right Wheel in the Right Place*. The grinding was done dry, so a clean, free, cool-cutting wheel was necessary. The wheel had to hold its shape and last long enough to effect an economy.

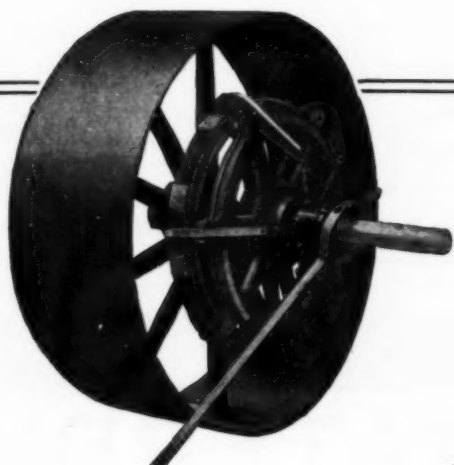
THE WHEEL SELECTED FOR THE JOB  
WAS AN ALOXITE GRINDING WHEEL

Carborundum Service is solving grinding problems in other plants—it can in yours.

THE  
**CARBORUNDUM COMPANY**  
NIAGARA FALLS, N. Y.



## "SAFETY FIRST"



## MEDART FRICTION CLUTCHES

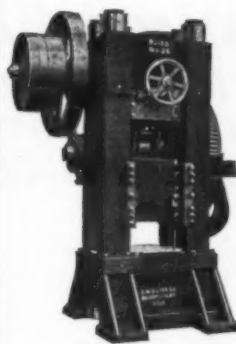
May save the lives of your workmen and many dollars in lawsuits for you. A man's life could be crushed out while you run to shut down the entire plant. Medart Friction Clutches are the solution; with them the very machine where the accident occurred can be stopped in a second.

They are made in all sizes and for every requirement. Are simple in construction; have great strength and durability. Can be used in connection with Medart steel rim, cast iron or wood pulleys, rope sheaves, sprocket wheels and gears. Investigate today before it is too late.

*Booklet with full details sent upon request. Address Dept. H.*

**Medart Patent Pulley Co.**  
St. Louis, Mo.

Steel Rim, Cast Iron and Wood Pulleys, Shafting, Hangers, Gears, Sprockets, Clutches, Rope Sheaves, Etc.



## For Heavy Embossing Work



Bliss Knuckle Joint Embossing Presses are specially adapted for embossing steel, britannia, brass, copper, aluminum, etc.; in the economical manufacture of metals, coins, jewelry, watches, silverware, name plates, etc.

They are of massive and accurate construction; all adjustments are quick and convenient. Built in nine sizes for pressures of 100 to 1500 tons.

*"Bliss Presses for Every Requirement."*

"Bliss" No. 25  
800-ton pressure

**E. W. BLISS CO.,** 4 Adams Street,  
Brooklyn, N. Y.  
Reps. for Chicago and Vicinity: Stiles-Morse Co., 646  
West Washington Street, Chicago, Ill.



## NO ACCIDENT POSSIBLE

Over 1500 people are yearly killed or crippled for life in the United States alone by projecting SET SCREWS. Don't wait till you have an accident. Remove all dangerous projecting SET SCREWS from your shafting and machinery, and replace them with ALLEN SAFETY SET SCREWS.

All sizes from 1/4" to 1" carried in stock in U. S. Standard and V thread.

*Send for circular No. 16 and free sample screw.*

**ALLEN MFG. CO., Inc.,** Hartford, Conn., U. S. A.  
CANADIAN FACTORY: ST. JOHNS, P. Q., CANADA

## Special Machinery Built

Our successful experience in building special machinery covers a broad and varied field. Have you anything special to build that you would like prices on?

**THE WOLF COMPANY,** Chambersburg, Pa.

## CRESSON-MORRIS POWER TRANSMISSION MACHINERY



### RING OILING PILLOW BLOCKS

All rigid Ring Oiling Pillow Blocks are above 4 1/8" shaft diameter and are constructed so as to permit removal of bearing parts for cleaning and rebabbiting without moving the shaft out of line.

We make a complete line of Power Transmission Machinery, which has long stood for the best in material and workmanship—and is backed up by the manufacturing experience of two generations.

**Cresson-Morris Company**

Successors to George V. Cresson Co.

**ENGINEERS—FOUNDERS—MACHINISTS**  
PHILADELPHIA, PA.

**In LEVIATHAN and ANACONDA  
you buy greater belting efficiency,  
service and economy for your money  
than in any other belting of any kind.**

This statement is made without reserve, and  
the proof will be more profitable to you than  
to us.

## LEVIATHAN AND ANACONDA BELTING

are made of stitched canvas because this  
material, processed the LEVIATHAN and  
ANACONDA way, makes the most service-  
able belting money can produce.

Write us for proof.



### MAIN BELTING COMPANY

Philadelphia  
Pittsburgh  
New York

Manufacturers and  
Engineers

Seattle  
Chicago  
Birmingham

Main Belting Co. of Canada, Ltd.  
Montreal Toronto

## Beware of the Excited Salesman. He is apt to exaggerate.

The sales force of the Chas. A. Schieren Co. are  
instructed to stick carefully to facts, because the  
actual truth about Duxbak Waterproof Leather  
Belting gives our strongest selling points.

Try one small Duxbak Belt and see how belting  
has improved.



*Chas. A. Schieren Company*  
ESTABLISHED 1886

Reg. U. S. Pat. Off. Tanners, Belt Manufacturers, Ferry St., N. Y.

Harwood R. Hall, Southern Sales Agent, 122 Shore St., Petersburg, Va.



## WATERBURY WIRE ROPE

We know our ropes are good—but our customers  
assert they are the "best." Our nearest office will  
be glad to give you prices and full information.

**WATERBURY CO., 80 South St., New York**

BRANCH OFFICES:

CHICAGO.....36 East Illinois Street  
DALLAS, TEXAS, Powell & Elliot Co.....911 Southwestern Life Building  
SAN FRANCISCO.....113 Davis Street  
BOSTON.....220 Franklin Street  
NEW ORLEANS, 1018 Maison Blanche Bldg., Canal and Dauphine Streets

We also make ARMORED ROPE—MANILA and SISAL CORDAGE—FIBRECLAD ROPE



## SPARTAN Steamproof Leather Belting

All that its name implies and then some—the ONE belt for hard  
and unusual drives—the harder the better. Send for Spartan Booklet  
—we can interest you if you will let us.

**The Graton & Knight Mfg. Co.**  
Worcester, Mass.



### THE "CHESAPEAKE" BELT PULLS

Transmits more power than any other Canvas Stitched. Fully Guaranteed.  
Chesapeake Belting Company Baltimore, Md.

### Service—Not Sentiment

There are many types of belting, Leather, Rubber, Gandy, and the belts  
resembling "Gandy" in general appearance and claimed to be "just as  
good but cheaper." When you buy belting you want to get the greatest  
service and the maximum satisfaction for the least money—the belt you  
want to buy is the belt from which you get the best results.

### Buy Gandy and Save Money

The initial cost of the Gandy is only about one-third that of leather  
belting, and much less than that of rubber belting, while it does the  
work equally as well.

The Gandy Belt is not an experiment. It has been on the market more  
than thirty-five years. The splendid results it is giving under all con-  
ditions and in every field of effort warrants a careful investigation by  
you before you place your next order.

We will explain our proposition fully to you if you return the coupon  
below.

### The Gandy Belting Company

738 W. Pratt Street, Baltimore, Md.  
New York Office:—36 Warren St.

The Gandy Belting Company,

738 W. Pratt St., BALTIMORE, MD.

Gentlemen: Please send me, without obligation, a sample of Gandy Stitched Cotton  
Belting, and all the information I need to give it consideration.

Name .....

Address (Street) .....

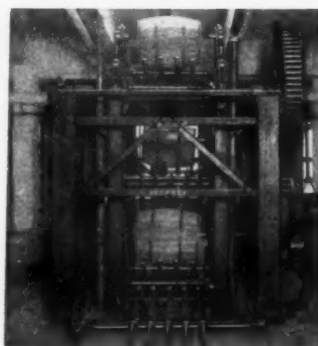
City..... State.....

### Get this Book on Transmission



If you have no Rope  
Transmission you should  
know *why it is best*. If you have Rope  
Transmission you'll want to know why  
*Columbian Manila Transmission Rope* is  
best. The book is FREE.

**COLUMBIAN ROPE COMPANY**  
600-625 Genesee St. AUBURN, N. Y.



Head frame of elevator in a  
10-story Wholesale House.

**1000 PACKAGES  
PER HOUR**

are handled by this

## JEFFREY Tray Elevator

By "stocking in" and "stocking out"  
at the same time.

Send for Bulletin No. 74-26 and see  
how Jeffrey Package Handling Eleva-  
tors and Conveyers are helping to  
increase efficiency. Output and Profits  
in more than 100 plants.

**JEFFREY MFG. CO., 926 North Fourth St., Columbus, O.**



## The "DEAD ONE" Said:

"Oh, that 'Hook 'er to the Biler' fellow makes me tired."

Then he muttered something like "Hot air."

Poor fellow, he'll wake up some day.

At any rate, we will keep right on blowing this old Manufacturers Record horn.

We do not think any "DEAD ONE" really wants to be dead. The trouble of it is, when you are "DEAD," you never know you are "DEAD."

When you find a "DEAD ONE" out behind the powerhouse kicking himself because he thought this ad. was written and paid for by a ——— and went and bought the "kind we have always used" (and cursed),

It is a sign that "DEADIE" has come to LIFE.

Here is what we are giving hundreds of Manufacturing Plants all over the land:

1. An elevator that runs at virtually no cost.
2. That is absolutely fool proof.
3. No repairs.
4. Always goes so long as the boiler holds together.
5. Goes when the engine is shut down.
6. NO PAY UNTIL IT MAKES GOOD.

This is why every mill owner but a "DEAD ONE"

"Hooks 'er to the Biler"



Direct Acting

Nearly 2000  
in Daily Use



Double Geared



THE RIDGWAY & SON CO., Coatesville, Pa.

Elevator Makers to Folks Who Know

## American Elevators Built by AMERICAN ELEVATOR & MACHINE CO. INCORPORATED LOUISVILLE KY.

### FULL AND SEMI-AUTOMATIC ELEVATOR GATES

STANDARD TIN CLAD  
FIRE DOORS  
SHUTTERS AND HARDWARE

Write for New Catalogue

RICHMOND SAFETY GATE CO.

1202 Candler Bldg., ATLANTA, GA.

RICHMOND, IND.

217 Equitable Bldg., BALTIMORE, MD.

### ELEVATORS PASSENGER and FREIGHT Electric, Hand Power and Belt Power

Westbrook Elevator Company

Correspondence Solicited.

Atlanta Office, 215 Rhoades Building

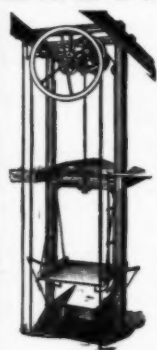
DANVILLE, VIRGINIA

### PASSENGER and FREIGHT ELEVATORS

ELECTRIC HYDRAULIC BELT HAND

JAMES H. CURRAN ELEVATOR CO., 114 W. 2d St., Cincinnati, Ohio

### HAND, BELT AND ELECTRIC FREIGHT ELEVATORS



Our hand power machines have iron frames, and all shafts run in roller bearings, insuring DURABILITY and EASY RUNNING. Make floor space of upper stories available at small cost.

Dumb-Waiters  
Pavement Lifts

J. G. SPEIDEL  
READING, PA.

Write for catalog

Warsaw Elevator Company  
T. FRANK WILHELM, Manager

Special Attention Given to Repairs

Office and Warehouse

Mercer, Grant and Water Sts. BALTIMORE, MD.

ELEVATORS PASSENGER and FREIGHT  
HAND-BELT-ELECTRIC-HYDRAULIC  
PUMPS

Tank, Deep Well and Boiler Feeding  
All Latest and Most Efficient Designs  
MOFFATT MACHINERY MFG. CO.  
CHARLOTTE, N. C.

KILDUST The Best Sweeping  
Compound Made

Packed in 100-lb. half barrels worth \$2.25  
and 200-lb. barrels worth \$4.00. F. O. B.  
Rome, Ga. Agents wanted in every town  
east of the Mississippi River.

MANUFACTURED BY  
THE KILDUST COMPANY Rome, Ga.

### Standard for a quarter century. Passenger and Freight. All Powers. TURNER ELEVATORS

K. C. ELEVATOR MFG. CO.

(Established 1881)

107-113 W. 19th St., Kansas City, Mo.

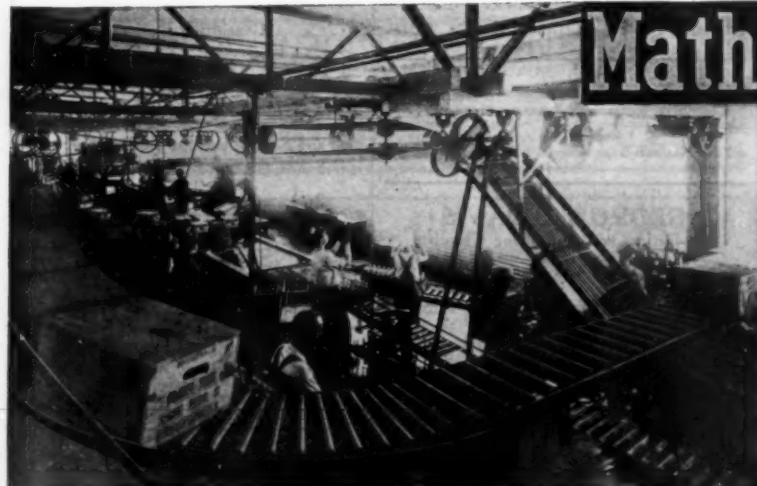
### PASSENGER and FREIGHT ELEVATORS

ELECTRIC, BELTED, HAND POWER  
ANY CAPACITY

WM. A. MILLER ELEVATOR MFG. CO.

9th and Victor Sts., ST. LOUIS, MO.

WE MANUFACTURE A COMPLETE LINE OF  
Electric, Belt & Hand ELEVATORS Atlas Machine Co.  
Louisville, Ky.



Showing Complete Case and Tray Handling System in Spring Water Bottling Plant.

## Mathews Gravity Carrier Co.

Representatives in All  
Leading American  
Cities.

Main Office and Factory ELLWOOD CITY, PA.  
Branch Factories: TORONTO, ONT. LONDON, ENG.

**Real Economy Consists in Reducing Labor Expense.** One of the most popular methods now being adopted by all progressive industries for increasing efficiency and reducing costs is the installation of labor-saving conveying equipment to secure rapid and economic handling of raw and finished products. The MATHEWS Line of Gravity and Power Conveyers have been developed through fifteen years of constant contact with

### Package Handling Problems

under all conditions. Our equipment has become standard for design, quality and performance. We have advanced knowledge, Engineering skill and practical experience to apply to your particular problem. Catalogs on request.

# Architects, Engineers, Chemists, Contractors.

## MILBURN, HEISTER & CO.

Architects

WASHINGTON

D. C.

## WM. NEWTON DIEHL

Architect

355 Monticello Arcade

NORFOLK, VA.

DRAUGHTSMEN

BLUE PRINTERS

THE CHILDREY COMPANY  
(INCORPORATED)

Blue Print Paper

1108-9 Virginia Railway & Power Building  
RICHMOND, VA.

## ANDERSON & CHRISTIE

Incorporated

Consulting Municipal Engineers

Water-Supply, Sewerage, Street and Highway Improvements. Expert advice in design, installation and operation of Mechanical filter plants for water purification.

Commercial Bank Building CHARLOTTE, N. C.

## GILBERT C. WHITE, C. E.

M. Am. Soc. C. E.

Consulting Engineer

Water Works, Sewerage, Streets,  
Electric Lights.

CHARLOTTE, N. C.

## HIRAM ALLEN MILLER

CONSULTING ENGINEER

Thirty Years' Experience.  
Expert Work a Specialty.  
REFERENCES

Prof. Geo. F. Swain, Harvard University.  
Prof. Wm. H. Burr, Columbia University.  
Henry S. Pritchett, LL.D., President Carnegie Foundation, New York City.

8 Beacon Street BOSTON, MASS.

## E. W. MYERS

Consulting  
Engineer

Water Power Sewerage Water Supply

GREENSBORO NORTH CAROLINA

## WALKER ENGINEERING CORPORATION

J. B. WALKER, President

Railroad, County and Municipal Engineers  
Sewerage Systems Maps Water Supply Drainage  
411-414 American National Bank Building  
TAMPA, FLORIDA

## P. J. BERCKMANS CO.

Landscape Architects

Plans and reports for development of private grounds parks, cemeteries, public and educational institution and real estate subdivisions.

207 Terminal Bldg. AUGUSTA, GA.

## H. B. HAVELY, C. E.

Consulting Civil and Hydraulic Engineer

Highway Engineering a Specialty

Bituminous Macadam, Asphalt, Brick and Concrete Pavements, Bridges, Railways, Water-Works and Sewerage

MORRISTOWN, TENNESSEE

## McCRADY BROS. & CHEVES, Inc.

Engineers and Contractors

Real Estate Developments, Drainage, Roads, Municipal Work, Surveys, Designs, Estimates, Construction.

CHARLESTON, S. C. LAURENS, S. C.

## THE H. G. FERREE CO.

Appraisers—Engineers

Public Utilities Industrial Plants  
Commercial Buildings  
11 South Second St. MEMPHIS, TENN.

## W. R. GATLIN

Architect and Engineer

Theatres a Specialty HOPKINSVILLE, KY.

## THE ARNOLD COMPANY

Engineers—Constructors

Electrical—Civil—Mechanical

105 South La Salle St.

CHICAGO

## DANIEL B. LUTEN

Designing and Consulting Engineer

Reinforced Concrete Bridges exclusively.  
Associate Engineers in each State.

INDIANAPOLIS

INDIANA

## C. W. REQUARTH CO. CONCRETE

Engineering Construction

Reinforced Concrete Bridges, Heavy Foundations and Retaining Walls, Fire and Waterproof Structures, Concrete Sewers and Conduits.

CHARLOTTE, N. C.

## HARRY L. GILMAN

Consulting Engineer

8 Congress Street BOSTON, MASS.  
Seaport, Dock Wharf, Transportation and Industrial Development. Plans and Reports prepared. Data furnished.

Offices and correspondents in London, Paris, Brussels.

## WILEY & COMPANY

Analytical and Consulting Chemists

Experts on Fertilizer Materials, Coal, Greases, Foods, Drugs, Dairy Products, Chemical and Bacteriological Examination of Water for Domestic and Manufacturing Purposes.

15 So. Gay St. BALTIMORE, MD.

## ROBERT SAYRE KENT, Inc.

Engineers

Designing, Superintending and Operating Sugar Factories and Refineries, Iron Foundries and other Industrial Plants.

Rotary and Stationary Dryers and other apparatus and machinery.

50 Court Street BROOKLYN, N. Y.

## EDMUND T. PERKINS ENGINEERING CO.

Consulting and Supervising Engineers

Agricultural, Drainage, Flood Protection, Irrigation.  
First National Bank Building CHICAGO

## ROBERT W. HUNT & CO.

ENGINEERS

INSPECTION AND TESTS

Railroad Materials, Structural Steel and Cement, Cars, Locomotives and All Machinery  
CHICAGO NEW YORK PITTSBURGH  
St. Louis London Montreal San Francisco  
Toronto Seattle Vancouver Mexico City

## JOHN R. BAYLIS

Hydraulic and Sanitary Engineer

Water Works, Sewers, Water Purification, Sewage Disposal and Garbage Disposal Plants.

Sanitary Analysis of Water.

704 Farley Building BIRMINGHAM, ALA.

## SHAND ENGINEERING CO.

Columbia, S. C.

Engineering Reports for Financial Interests.

## The Dabney Engineering Co.

Water Works, Sewers, Drainage, Electric Lighting Systems, Plans, Estimates, Reports.

81 Porter Building MEMPHIS, TENN.

## The Interstate Construction Co.

GENERAL CONTRACTORS

708 Realty Building LOUISVILLE, KY.

## J. H. MAYER, C. E.

Southern Representative Ashley System Sewage Purification and Disposal, without sewers.

2018 Third Avenue BIRMINGHAM, ALA.

## ALFRED M. QUICK

Mem. Am. Soc. C. E. Consulting Engineer

Water Supply and Sewerage Systems.

Dams and Power Plants.

707 Munsey Building BALTIMORE, MD.

## WALTER WILSON CROSBY

M. Am. Soc. C. E., (formerly State Highway Engineer)

Consulting Engineer

Paving and Roads, Landscape and Park Work,  
Efficiency and Organization.

1431 Munsey Building

BALTIMORE, MD.

## Hogue Engineering Association ENGINEERS

CIVIL  
MINING  
MUNICIPAL

ELECTRICAL  
HYDRAULIC  
GEOLOGISTS

CHARLESTON

WEST VIRGINIA

## H. E. MOLE

Engineer

Examinations, Estimates and Reports. Plans and Specifications.

Lighting and Power Properties.

55 Liberty Street

NEW YORK

## DAY & ZIMMERMANN

Successors to

DODGE, DAY & ZIMMERMANN

Engineers

Layout, Design, Construction, Industrial Plants,  
Examination, Reports and Operation,  
Public Service Properties.

611 Chestnut Street

PHILADELPHIA

## LEVY-MORTON CO.

Contractors

Electrical Installation, Tile Floors

COLUMBUS

GEORGIA

## MARTIN J. LIDE

Consulting and Constructing Electrical and Mechanical Engineer

BIRMINGHAM

ALABAMA

## B. PARKS RUCKER

Consulting and Constructing

Electrical Engineer

Estimates, Plans, Specifications and Supervision of Construction of Lighting, Industrial and Power Installations. Hydro-Electric Plants.  
Power Transmission, Municipal Lighting, etc.

CHARLOTTE

NORTH CAROLINA

## PITTSBURGH TESTING LABORATORY

General Inspection

Specialties: Cement and Road Materials, Cast Iron Pipe, Chemical and Physical Tests.

CINCINNATI BIRMINGHAM DALLAS  
CHICAGO PITTSBURGH NEW YORK

## E. M. JONES

Mining Engineer

Reports on Coal and Iron Ore Properties  
Purchasers secured for properties of unquestioned merit.

1023-4 James Bldg. CHATTANOOGA, TENN.

## THOS. C. KELLY, Member A. S. M. E.

Consulting, Designing & Reconstructing Engineer  
Electric Light and Power Heating and Ventilating  
Ice and Refrigerating

405 2nd National Bank Bldg. CINCINNATI, O.

## GEORGE C. DAVIS

Analytical and Consulting Chemist

Analyses of Iron, Steel, Ores, Alloys,  
Coal, Sand, Clay and Cement

39 South Tenth St. PHILADELPHIA, PA.

## W. WALDO

Engineer

HOUSTON

TEXAS

## ARTHUR PEW

M. Am. Soc. C. E.

M. Inst. C. E.

Consulting Engineer

Municipal Work.

ATLANTA, GA.

## P. O. KEILHOLTZ

Consulting Engineer

Formerly Chief Engineer United Railways & Electric Co. and Consolidated Gas, Electric Light & Power Co. of Baltimore.

Continental Bldg.

BALTIMORE, MD.

## ALEXANDER POTTER, C. E.

Hydraulic, Sanitation, Concrete Structures

Designed—Financed—Executed

50 Church Street

NEW YORK

## FROEHLING & ROBERTSON

Richmond Testing Laboratory

CHEMISTS AND ECONOMIC GEOLOGISTS

Analysis of all kinds. Waters and fertilizers specialties. Standard Cement Testing Examinations and reports on mineral properties.

2 N. 9th Street

RICHMOND, VA.

## HARRY STEVENS

Civil and Mechanical Engineer

Water Works, Sewerage and Sewage Disposal, Power Plants, Factories, Steam and Electric Railways, Surveys, Examinations, Reports and General Engineering Work.

Union Trust Building WASHINGTON, D. C.

1906 1914

## GLAUCUS A. BRYANT

Civil Engineer and Surveyor

Real Estate Development of large and small tracts a specialty. Topographical Surveying, Levelling, Town and County Maps, Preliminary and Location Surveys, etc. Estimates for contracts made for engineering and surveying only. Capable assistants and organization.

DeWITT, VA.

WILSON, N. C.

## MORRIS KNOWLES

Mem. Am. Soc. C. E. Mem. Am. Soc. M. E.

Hydraulic and Sanitary Engineer

Investigations and Valuations for Purchase or Financing  
Water and Sewer Systems, Water Power, Drainage and Irrigation Systems.

Oliver Building

PITTSBURGH, PENNA.

J. E. Greiner, Mem. Am. Inst. Cons. Engrs.

Edna B. Whitman, Mem. Am. Water Wks. Assn.

GREINER & WHITMAN

(Members Am. Soc. C. E.)

Consulting Engineers

Specialties—Bridges, Docks, Water Works, Sewerage Systems, Water Power and Municipal Improvements

Fidelity Building, BALTIMORE, MD.

## G. P. GRIMSLEY, Ph. D.

Mining Geologist

Formerly Asst. State Geol. W. Va. Formerly Mgr.

National Limestone Co. of W. Va.

Consulting Geologist National Limestone Co.

Reports, Consultation on Coal, Oil, Clays

Gypsum, Limestone, Iron Ores

1105 Wyandott Bldg. Present Address

COLUMBUS, OHIO MARTINSBURG, W. VA.

New York City

100 William St.

## NICHOLAS S. HILL, Jr.

AND

S. F. FERGUSON

Consulting Engineers

Water Supply and Sewage Disposal  
Evaluations and Reports

Laboratory for Analysis of Water  
and Sewage and for Testing Cement  
Sands, Coal and Metals.

Steam and Hydraulic Power Plants.

## RENSHAW & BREECE

Huntington, West Va.

Reports on Oil and Gas Properties.

## HENRY E. ELROD

Mem. Am. Soc. M. E. Assoc. M. Am. Soc. C. E.

Roads, Pavements, Municipal Works, Reports

and Appraisal of Public Utilities.

Southwestern Life Bldg. DALLAS, TEXAS

## W. C. O'BRIANT

Millwright

General Mill Construction. Saw Mills a Specialty.

Randolph Bldg. MEMPHIS, TENN.



# Architects, Engineers, Chemists, Contractors.

## Ford, Bacon & Davis Engineers

115 Broadway, New York  
New Orleans San Francisco

W. N. Brown  
M. Am. Soc. C. E.  
M. Am. Inst. M. E.

## BROWN & CLARKSON

C. D. S. Clarkson  
Assoc. Mem. Am. Soc. C. E.  
Mem. Wash. Soc. Engrs.

### SPECIALISTS IN TOPOGRAPHIC ENGINEERING

(10 Years with U. S. Geol. Survey)  
MUNICIPAL, TRIANGULATION AND TOPOGRAPHIC SURVEYS  
Water Power, Reclamation, Drainage, Mine Development and Geological Surveys  
Star Building, Washington, D. C.

## ATLANTIC ENGINEERING COMPANY CIVIL ENGINEERS

Specialists on Land Drainage, Real Estate Developments, Highways, Bridges, Water Powers, Steam and Electric Railroads. Railroad Valuation, General Appraisals.  
Germania Bank Building SAVANNAH, GA.

## WILLIAM C. SPIKER, C. E. CONSULTING ENGINEER

Foundations, Steel and Concrete Skeletons for Skyscrapers and Heavy Buildings, Steel and Concrete Bridges, Dams, Flumes, Canals, Surveys, Estimates, Reports, Waterpower Developments.  
SPECIALTY—Plans and Superintendence for Complicated or Difficult Construction Work.  
1504-6-8 Hurt Building ATLANTA, GA.

## SCOFIELD ENGINEERING COMPANY CONSULTING AND DESIGNING ENGINEERS

ALL CLASSES PUBLIC UTILITIES  
PHILADELPHIA PENNSYLVANIA

## THOMPSON & MOSELEY, Inc.

Contracting Engineers Greensboro, N. C.  
DRAINAGE

## ALLEN-SCALES ENGINEERING COMPANY

INCORPORATED  
ENGINEERS AND CONTRACTORS

Water Works Heating and Ventilation Power Plants  
Stahlman Building NASHVILLE, TENN.

## SAVANNAH ENGINEERING & CONSTRUCTION CO.

SAVANNAH, GEORGIA

Engineers and Constructors

## FOSTER-CREIGHTON-GOULD CO.

ENGINEERS AND GENERAL CONTRACTORS

NASHVILLE, TENNESSEE

STEEL CONSTRUCTION AND ERECTION  
ALL KINDS OF CONCRETE CONSTRUCTION  
CRUSHED STONE AND "DARLINGTON" OOLITIC DIMENSION STONE

## PAIN AND YOUNG

LANDSCAPE ARCHITECTURE,  
GARDENING and ENGINEERING  
Residences, Hotels, Parks and Subdivisions  
519 Citizens Bank Bldg. TAMPA, FLORIDA

## Walker Electric & Plumbing Co.

Plumbing, Heating and  
Electrical Contractors

ROME AND COLUMBUS,

GEORGIA

## THE A. J. MARTIN CO.

Contracting Engineers

Bridges, Dams and Power Houses. Difficult  
Foundation Work.

311 Union Srg. Bldg. AUGUSTA, GA.  
PORTSMOUTH, OHIO

## GAS PLANTS

Complete, Gas Plants, including mains and  
service, designed and installed

## GAS ENGINEERING CO.

TRENTON

N. J.

## Mill Architect and Engineer

SPECIALTY:

Textile Mills and Water Power Developments

J. E. SIRRINE GREENVILLE, S. C.



## Stone & Webster Engineering Corporation

CONSTRUCTING ENGINEERS

NEW YORK

BOSTON

CHICAGO

## THE J-G-WHITE COMPANIES

FINANCIERS  
ENGINEERS

MANAGERS  
OPERATORS

43 EXCHANGE PL.



NEW YORK

## GRAVES ENGINEERING CO., Inc.

Manage, Construct, Finance

PUBLIC UTILITY PROPERTIES

Examinations and Reports. Rate Specialists.

35 Pine Street

NEW YORK

## TUCKER & LAXTON

CONTRACTING ENGINEERS

Filters, Concrete Work, Hydro-Electric and Steam Electric Construction  
CHARLOTTE, NORTH CAROLINA

## THE S. R. SMYTHE COMPANY

ENGINEERS

PITTSBURGH, PA.

CONTRACTORS

Steel Works, Rolling Mills, Blast Furnaces, Hot Blast Stoves, Furnaces for all  
Purposes. Operated with Producer Gas, Natural Gas, Oil or Pulverized Coal.  
Coke Ovens. Gas Producers, Hand Operated or Mechanical.  
The Valve of the Era. SCHILD SLIDING GAS AND AIR REVERSING VALVES

## THE INSTITUTE OF INDUSTRIAL RESEARCH

WASHINGTON, D. C.



Consulting Engineers and Chemists

LIME KILNS, HYDRATED LIME AND CEMENT PLANTS

INDUSTRIAL ENGINEERING

TESTS AND ANALYSES

SEWAGE DISPOSAL



## CUNNINGHAM CONSTRUCTION COMPANY

Consulting and Construction Engineers

Complete from Foundation to Plant in Operation. Also Steel and Concrete Bridges.

100 TO 110 MARSHALL STREET

OFFICE AND PLANT:

SHREVEPORT, LOUISIANA

## DREDGING

RIVER AND HARBOR IMPROVEMENTS

Hydraulic Fills Land Drainage Dock Construction

GLOBE DREDGING CO.,

Savannah, Ga.

## THE J. B. McCRARY COMPANY

ENGINEERS

ATLANTA, GEORGIA

MUNICIPAL IMPROVEMENTS

Southern work only. Have built over half of the Water, Light and Sewer Systems in Georgia and  
Alabama. We design—Finance—Superintend. Bonds Purchased.

## CONCRETE IN THE COUNTRY

Here's a valuable illustrated booklet that we want to send you.

It tells you of many places around the farm where concrete can be used to advantage.

The progressive farmer is now using concrete wherever he can, because he knows when the job is done it is a permanent one which will not wear out or need repair.

This booklet will show you exactly how to mix concrete, make the forms, and just how to build many kinds of farm structures of concrete.

Write for this booklet today, and also ask for prices on

### Clinchfield Portland Cement A Home Product for Southern Upbuilding

Clinchfield Cement is made in the South, and can be delivered to you quickly.

The same careful attention is paid to small orders for farm uses that is given to large orders for big building construction.



**Clinchfield Portland Cement  
Corporation**

Office and Mills  
KINGSPORT, TENN.

### Concrete Roads are now under construction in Lee County, Mississippi, and Fulton County, Georgia



**CONCRETE  
FOR  
PERMANENCE**

There is now under construction in Lee County, Mississippi, connecting Saltillo and Verona, twelve miles of magnificent Concrete Highway. Still another is under construction in Fulton County, Georgia, three miles from Atlanta. These roads will last for all time, monuments to the commissions that built them.

Let us send you "Concrete Highways," it is free. Also "Concrete in the Country," devoted to the use of Portland Cement on the farm.

**DIXIE PORTLAND CEMENT CO.**  
James Building CHATTANOOGA, TENN.



### 700 Per Cent. Growth In Seven Years Means What?

Our Output is now seven times larger than when we started in 1907. An Average of 100% per year.

THE REASON IS SATISFIED CUSTOMERS

THINK IT OVER

Write for Prices

**Standard Portland Cement Company**  
Birmingham, Ala. Works: Leeds, Ala.

J. I. McCANTS, Sales Manager

## NOTE— Window Area

Window area obtainable in reinforced concrete is more than double that obtainable in ordinary brick construction.

In ultimate cost, CONCRETE industrial buildings are lowest.

Illustrated book showing views of fifty concrete factories and warehouses, giving cost per square and cubic foot, insurance rates, etc., sent free upon receipt of nine cents to cover postage.



Reinforced concrete factory building, Winston-Salem, N. C.  
MENGEL BOX COMPANY Owners.

**Built of OLD DOMINION PORTLAND CEMENT**  
Harwood & Moss, Contractors, Newport News, Va.

**VIRGINIA PORTLAND CEMENT CO.** Fordwick, Va.

**WM. G. HARTRANFT CEMENT CO.**

SOLE SELLING AGENT

Real Estate Trust Building

PHILADELPHIA, PA.



**Southern States Portland Cement**

We produce only one grade  
**THE HIGHEST**  
ALWAYS UNIFORM

**Southern States Portland Cement Co.**  
Office and Mills—ROCKMART, GA.



## KOSMOS PORTLAND CEMENT

used in the most important engineering undertakings because of its high quality. One grade only. Prompt shipments. Let us quote.

**Kosmos Portland Cement Co., Inc.,** Louisville, Ky.

**Coosa Portland Cement**

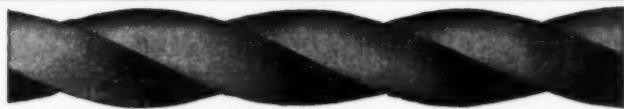
SOLE SELLING AGENTS

**KIRKPATRICK SAND & CEMENT CO.**  
BIRMINGHAM, ALA.

**STEEL BARS**

for  
**Reinforcing  
Concrete**

**LACLEDE STEEL CO.**  
ST. LOUIS, MO.

**COLD TWISTED STEEL BARS FOR CONCRETE REINFORCEMENT**

GREATER VARIETY OF SIZES.

GREAT INCREASE IN TENSILE AND ELASTIC LIMIT.

REQUIRES CONSIDERABLE LESS STEEL, AS MEANING A SAVING IN COST.

COLD TWISTING MEANS UNIFORMITY OF TWIST, A PHYSICAL TEST OF EACH BAR, AND ELIMINATES SCALE FOR BETTER BOND IN CONCRETE.

OPEN HEARTH SOFT STEEL—BILLETS, BLOOMS, MERCHANT BARS AND ANGLES.

SHAFTING—TURNED AND POLISHED, ALSO COLD DRAWN—FINISHED SHAPES.

**THE C. PARDEE WORKS**

Perth Amboy, N. J.

Automatic  
Improved  
For All Materials.

**DRYERS**

Economical—Efficient  
Great Capacity  
**American Process Co.**  
68 William St.  
New York.

Indirect  
Heat

**ROTARY DRYERS**

Especially suitable for drying all kinds of GRANULAR MATERIAL

**HERSEY MANUFACTURING CO.,**

South Boston, Mass.

## The C.O. BARTLETT AND SNOW CO.

CLEVELAND, OHIO, U.S.A.

We make elevating and conveying machinery, drop forged chain, shaking and revolving screens, car hauls, coal and ore conveyors, retarding conveyors, gypsum machinery, paint machinery, mining machinery, mechanical dryers, universal excavators and soft mud brick machinery.



*The longer your barrows last—the less they cost*

**Sterling**

**Barrows and Carts**

cost less in the long run than ordinary barrows because they last longer.

Naturally—they are built stronger, more substantial.

Their frame construction is the strongest it is possible to produce.

The patented self-lubricating wheel and the scientific balance of the body make for easy wheeling.

Whatever your barrow requirements, there is a Sterling to meet them—and reduce your expense in so doing.

Ask for Catalog No. 19.  
It describes the entire line.

**Sterling Wheelbarrow Co.**

6415-6500 Pullen Ave., Milwaukee, Wis.

OPEN HEARTH QUALITY

# STEEL BARS

**For Manufacturing Purposes**

We make all grades of steel to meet various trade requirements, such as Dead Soft Welding and Forging, Threading or Bolt Stock, Soft and Medium Merchant or Machine Steel, Soft Standard, Medium Hard, and High Carbon Steel Bars.

ALSO

**CONCRETE** (ROLLED IN ACCORDANCE WITH MANUFACTURERS STANDARD SPECIFICATIONS)

STEEL BARS FOR REINFORCING CONCRETE  
COLD TWISTED SQUARE BAR



Cold Twisted Squares, Plain Squares, and Plain Rounds.

We make soft, medium, and hard or high carbon concrete bars, rolled from new open-hearth steel billets, which we produce from high-grade pig-iron, made in our own blast furnace.

Can furnish in any lengths specified from 1 to 60 feet.

Please let us hear from you when in the market.

**GULF STATES STEEL COMPANY**

General Sales Offices

Works  
ALABAMA CITY, ALA.

BIRMINGHAM, ALA.

# TENNESSEE COAL, IRON & RAILROAD COMPANY

---

## PIG IRON

FOUNDRI—FORGE—BASIC

"DeBardeleben"

"Eureka"

"South Pittsburg"

"Ensley"

"Alice"

---

## OPEN HEARTH STEEL

RAILS

BLOOMS

BILLETS

SLABS

BARS

TWISTED SQUARES

SHEARED PLATES

ANGLES

---

## COAL

## COKE

STEAM GAS BLACKSMITH DOMESTIC

FURNACE

FOUNDRI

DOMESTIC

---

GENERAL OFFICES: Brown-Marx Bldg., Birmingham, Ala.

### BRANCH OFFICES:

Boston  
Denver

Buffalo  
Detroit  
Pittsburgh

Chicago  
New Orleans  
St. Louis

Cincinnati  
New York  
St. Paul

Cleveland  
Philadelphia

Pacific Coast Representatives: United States Steel Products Company:  
San Francisco, Seattle, Portland, Los Angeles

Export Representatives: United States Steel Products Company:  
New York City





**MANHATTAN Perforated Metal Co.**  
Office and Works: 237-239 Centre Street, New York  
**PERFORATORS**  
of all Kinds of Metals for All Industries  
Write for Copper, Brass, Tin, Zinc or Aluminum Catalog.



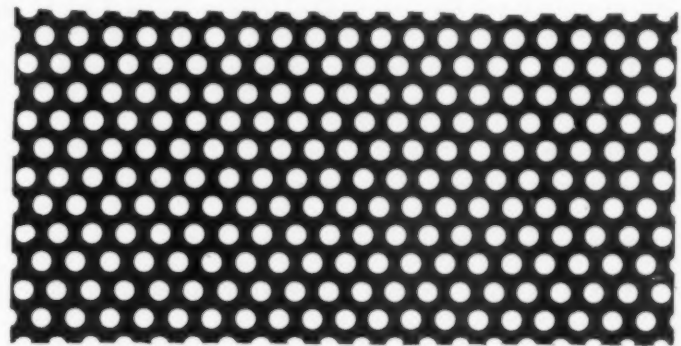
**Perforated Metal Screens**  
For Coal, Coke, Ore and Rock  
ALSO FOR  
Cotton Seed Oil Mills and Phosphate Mines  
Elevator Buckets (Plain and Perforated)  
Stacks and Tanks  
**HENDRICK MFG. CO. CARBONDALE, PA.**  
New York Office, 30 Church St.

**PERFORATED METALS HEADQUARTERS**  
Cotton Seed Oil Work A Specialty  
Send for Samples  
**ERDLE PERFORATING CO. Rochester, N. Y.**

**INDUSTRIAL AND POWER PLANT CONSTRUCTION**  
We design, erect and equip plants complete, and specialize in equipment for economic handling and storage of coal ashes and other bulk materials.  
Among our clients are—U. S. and British Governments, City of New York, General Electric Co., Standard Oil Co., American Woolen Co., International Paper Co., Boston Elevated Ry. Co.

Tell us your probable requirements and get our booklet giving references and describing installations.

**GUARANTEE CONSTRUCTION CO.**  
Cor. West and Cedar Sts. NEW YORK  
Boston: Board of Trade Bldg. Chicago: 108 So. La Salle St.



## PERFORATED METALS

When you want any kind of perforated metal, buy from an old reliable house, one whose products have been used for years with entire satisfaction in every part of the country. We have been supplying all kinds of perforated metals for over 40 years, and this experience coupled with expert workmen and modern machinery enable us to promptly meet all the requirements in our line.

*Our new illustrated catalogue will interest every user of perforated metal.*

**CHARLES MUNDT & SONS**  
490 Johnston Ave. Jersey City, N. J.

**WHEN YOU CONTEMPLATE installing any equipment fabricated from Sheet Metals  
CONSIDER CORROSION RESISTING IRONS and REMEMBER that**

# “ALLEGHENY IRON”

**The Pure Product—Resists Rust—Conquers Corrosion—Defies Decay**

Before you place your next order for Sheet Metal, investigate what we have to say regarding “ALLEGHENY IRON.” Although you may never have happened to realize it, the vast difference in the durability qualities of sheet metals amounts to either a great economy or a great extravagance—depending entirely upon your purchase.

### “Allegheny Iron” Is The Big Money Saver!

Then why not assure yourself from start to finish that you have invested your sheet metal money where it will pay the biggest dividends?

Write us for a complete description of “ALLEGHENY IRON” and testimonials showing what the consumer has to say regarding its deportment in actual service.

We also manufacture “ALLEGHENY IRON” Plates, Boiler Tubes, Pipe and Casing.

**ALLEGHENY STEEL COMPANY**  
**PITTSBURGH, PA.**

NEW YORK, 90 West Street

ST. LOUIS, 1100 Third National Bank Building  
PHILADELPHIA, 602 Pennsylvania Building

CHICAGO, 1720 McCormick Building

CHATTANOOGA, TENN., Jno. C. Vance Iron & Steel Co., Agents

## BELMONT IRON WORKS

DESIGN  
FABRICATE  
ERECT

## STEEL STRUCTURES

N. Y. OFFICE:  
32 BROADWAY

MAIN OFFICE AND WORKS:  
PHILADELPHIA, PA.

BRIDGE SHOPS:  
EDDYSTONE, PA.

## The Case Crane & Engineering Co.

MANUFACTURERS OF

## STEEL STRUCTURES

COLUMBUS, OHIO

## STRUCTURAL WORK—COAL TIPPLES

Roof Trusses—Steel Buildings

Railway and  
Highway

## BRIDGES

THE OREGONIA BRIDGE CO.

LEBANON, OHIO

# LUFKIN

Measuring Tapes  
and Rules

HAVE BEEN ON THE MARKET FOR 25 YEARS.  
MORE OF THEM ARE IN USE THAN ALL OTHER MAKES.  
MORE OF THEM ARE USED EACH YEAR.  
When YOU buy FOLLOW THE SOUND JUDGMENT OF EXPERIENCE.

CATALOG ON REQUEST

Saginaw, Mich. **THE LUFKIN RULE CO.** New York

## The Steel Products Company

232-4-6-8 East Broad St.  
P. O. Box 194

Savannah, Ga.

Manufacturers of Steel and Reinforced  
Concrete Structures, Highway Bridges,  
Towers, Cranes, Fire-Escapes, Bal-  
conies, and Miscellaneous Structural  
and Sheet Work.

Complete Stock of Structural Shapes,  
Galvanized and Black Sheets, Flat, Cor-  
rugated and V Crimped, Carried in Stock.

Write us for Designs, Estimates and  
Prices.

## THE L. SCHREIBER & SONS CO.

CINCINNATI

## STRUCTURAL STEEL ORNAMENTAL IRON

BRANCH OFFICES  
NEW YORK CHICAGO PITTSBURG ATLANTA  
NEW ORLEANS SAN FRANCISCO RICHMOND

## STRUCTURAL STEEL AND ORNAMENTAL IRON

We design, furnish and erect structural steel and orna-  
mental iron work of every description. We make a  
specialty of stairways, elevator enclosures, gates, grilles,  
balconies, pavement doors, fire escapes.

We have in Stock 1000 tons Structural Steel, insuring  
Prompt Delivery

CHESAPEAKE IRON WORKS

BALTIMORE, MD.

## Get us on the Wire

Wherever you are, you'll find a Bourne-Fuller warehouse near enough to assure you of quick delivery—at Cleveland, Cincinnati and St. Louis. Especially good service is afforded the Southern trade from the Cincinnati and St. Louis warehouses.

Your order is given careful attention whether it covers a large quantity of structural shapes or a few steel bars. Especial attention is called to our large stock of Open Hearth Steel Rounds, Plain and Cold-Twisted Squares for reinforced concrete work.

We also have unusual facilities for assuring prompt delivery of big shipments of anything in iron and steel, direct from the mills.

## Immediate Shipment

Structural shapes, plates, sheets, bar-iron, bar-steel, twisted bars for reinforcing concrete, rivets, Byers Wrought-Iron Pipe, Scott's All-Crucible Tool Steels, etc.

THE  
BOURNE-FULLER CO  
Iron, Steel  
Pig-Iron  
Coke  
CLEVELAND  
Pittsburgh Cincinnati  
BOURNE-FULLER STEEL CO  
St. Louis



## Get Ready

Spring business will soon start. Building will be commenced. The natural prosperity of the good old United States will be normal again. All men will be hustling.

And every one will want steel.

## IN A RUSH

We are prepared. We have the facilities.  
We will give you

## CISCO Service

Order now all your wants in

## Structural or Building Steel

Beams — Angles — Channels — Plates — Bars  
or

anything you may want or need in

## IRON OR STEEL

The Cincinnati Iron & Steel Co.

Cincinnati, U. S. A.

We Make a Specialty of Rivets



## STRUCTURAL STEEL ORNAMENTAL IRON

**Snead Architectural Iron Works**  
LOUISVILLE, KY.

## DIETRICH BROTHERS

**Structural and Ornamental Iron and Steel Works**  
Large Stock of Standard and Bethlehem Shapes  
**CONCRETE REINFORCEMENTS**  
BALTIMORE, MD.

**Merchants & Miners Trans. Co.**  
FLORIDA TRIPS  
"By Sea."  
BALTIMORE to  
JACKSONVILLE and return, \$33.80.  
SAVANNAH and return, \$25.00.  
Including meals and stateroom accommodations. Through tickets to all points. Fine steamers. Best service. State-rooms de Luxe. Baths. Wireless telegraph. Automobiles carried. Send for booklet Steamer Tuesday and Friday.  
W. P. TURNER, G. P. A., Baltimore, Md.

 **METALLINE**  
(Trade Mark Reg.)  
For Heavy Loads  
For Hard Service  
For Durability  
PLAIN BUSHING  
Made in Halves  
BUSHINGS FOR HOISTING SHEAVES  
**THE METALLINE COMPANY**  
Corporate name changed from North American Metalline Co.  
West Ave., Cor. 3rd St. Long Island City, N. Y.

**CRUSHED LIMESTONE**  
In any quantities. Deliveries to points in the Carolinas, Georgia, Florida, Alabama and Tennessee. Prompt shipments our specialty.  
Chickamauga Quarry & Construction Co.  
Chattanooga, Tenn.

**SPRAGUE**  
**CANNING MACHINERY**  
**COMPANY.**  
222 N. WABASH AV. CHICAGO, ILL.

## Established 1876 CHEESMAN & ELLIOT

Owners of National Paint Works  
**Made-to-Order Paint Makers**  
Bridge, Mill, House Paints 100 WILLIAM ST., NEW YORK

Richard G. Wood, President.  
Jonathan R. Jones, Vice Pres. and Treas.

W. W. Lukens, Sec'y and Asst. Treas.  
Howard Wood, Jr., Asst. Sec'y.

ESTABLISHED 1826

## ALAN WOOD IRON AND STEEL COMPANY

TRADE "A. W." MARK

Pig Iron, Billets, Blooms and Slabs, Iron and Steel Sheets  
Boiler Plates Flange Plates Tank Plates  
Diamond and Ribbed Pattern Rolled  
Steel Floor Plates

NEW YORK OFFICE  
50 Church St.

GENERAL OFFICES, Morris Bldg.  
PHILADELPHIA

Branch Office  
Continental Trust Bldg.  
Baltimore, Md.

Southern Office  
Hurt Bldg.  
Atlanta, Ga.

Western Office  
Pierce Bldg.  
St. Louis, Mo.

## PHOENIX IRON CO.

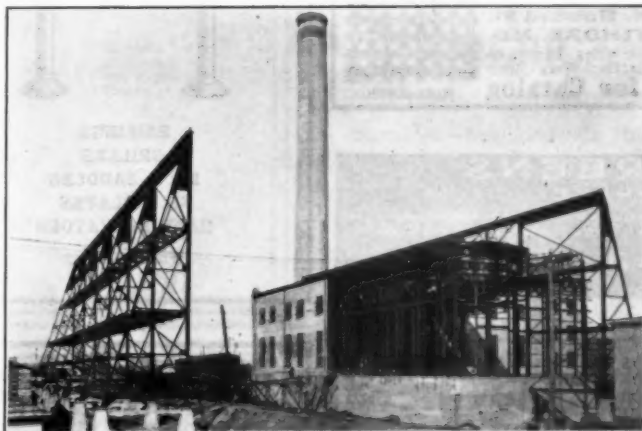
PROMPT SHIPMENTS ON  
**STRUCTURAL STEEL SHAPES**  
FROM OUR MILLS OR FROM OUR LARGE STOCK  
DESIGNS AND ESTIMATES FOR ALL KINDS  
OF STEEL STRUCTURES

## DELAY ELIMINATED

Works, Phoenixville, Pa. Main Office, 410 Walnut St., Philadelphia, Pa.  
Other Local Offices { 110 State St., Boston, Mass.  
49 William St., New York  
Chamber of Commerce Bldg., Rochester, N. Y.

## VINCENNES BRIDGE CO.

**BRIDGES, STRUCTURAL WORK**  
VINCENNES, IND.  
Memphis, Tenn. Address nearest office Muskogee, Okla.



Texas Power & Light Company's Plant, Waco, Texas

## STRUCTURAL STEEL FOR BRIDGES, BUILDINGS, ETC.

## VIRGINIA BRIDGE and IRON CO.

General Offices—Roanoke, Va.

Works { Roanoke  
Memphis  
Atlanta

Annual Capacity  
100,000 Tons

Contracting  
Offices { Memphis  
Atlanta  
New Orleans  
Charlotte  
Birmingham

## Wire Stapling Machinery

For Fruit Packages, Baskets, Crates,  
Barrels, Butter Dishes, Boxes, etc.  
Corrugated Joint Fastener Driving  
Machinery.

SARANAC MACHINE CO. Boston Harbor, Mich.

  
"The Original Fan of the Many Blade Fan."  
**AMERICAN BLOWER COMPANY**  
DETROIT, MICHIGAN, U.S.A.  
Southern Office, Empire Building, Atlanta.



## NICKERSON COLUMNS...

are preferred by architects,  
contractors and owners who  
know most about column  
construction, because:

Of their style, proportions  
and durability.

The Double Lock Joint Con-  
struction insures quality.  
Workmanship Guaranteed.

"Vignols" is our standard  
for proportions when archi-  
tect's details are not fur-  
nished.

Interior Trim to detail.  
Send for Catalog No. 4M.

**Nickerson Mfg. Co.**  
Knoxville, Tennessee

## SCHERZER ROLLING LIFT BRIDGES

Fulfill Every Modern Requirement of a Movable Bridge and are Replacing Swing  
Bridges in this country and abroad. Write us for information, sketches and  
Estimates.

THE SCHERZER ROLLING LIFT BRIDGE CO.

Cable Address, "Scherzer," Chicago.

Main Office, 1616 Monadnock Block, Chicago, U. S. A.

## EAST ST. LOUIS BRIDGE CO.

EAST ST. LOUIS, ILL.  
**BRIDGES AND STRUCTURAL WORK**  
OUR LOCATION SAVES FREIGHT

## CHAMPION BRIDGE COMPANY

WILMINGTON, OHIO

MANUFACTURERS OF

**Bridges and Structural Work**  
Southern Office—Atlanta, Ga.

**RICHMOND**  
**STRUCTURAL**  
**STEEL CO.**

Design Manufacture Erect  
**STEEL and IRON**  
FOR BUILDINGS AND BRIDGES  
Estimates Cheerfully Furnished  
RICHMOND and NORFOLK, VA.

**Asbestosteel** is the combination of Asbestos Protected Metal and concrete, and combines the advantages of sheet-steel with the permanency of granite. Asbestos Protected Metal consists of Steel Sheets protected on all sides by asphalt and pure long-fibre Asbestos-Felt.

An Asbestosteel roof is waterproof, fireproof, strong, light, permanent and cheap.



**Asbestos Protected Metal Co.**  
Pittsburgh  
First National Bank Building

## DUFUR, BAGGOTT & CO.

BRASS AND STEEL WIRE WORK OF EVERY DESCRIPTION

Absolute Prompt Delivery.

Bank Work Elevator Enclosures Elevator Cabs Counter Railings Grills  
Wickets Guards Partitions Skylight Protectors, Etc.  
225 W. Saratoga Street BALTIMORE, MD.



We are Manufacturers  
**BANK AND OFFICE RAILINGS**  
Plain and Ornamental Iron Work of all Descriptions  
**J. E. Bolles Iron & Wire Works**  
DETROIT, MICH.

Write for Catalogue M-27

State your wants.



ESTABLISHED 1830.  
**DUFUR & CO.**  
309 N. Howard St.  
BALTIMORE, MD.

WIRE RAILING, WIRE AND IRON GRILLE WORK, BANK AND OFFICE PARTITIONS, RAILINGS, GRILLES, ETC. WIRE CLOTH WINDOW GUARDS, STOPS, FRONT GUARDS, ETC.

WICKET

WIRE CLOTH

Write for Catalog



## FLY SCREENS METAL FRAME

REWIRABLE CINMANCO make, see method of securing wire cloth held by rounded corners which prevents cutting by vibration. Our Free booklet of interest to every Carpenter and Builder.

**THE CINCINNATI MFG. CO.**

1243-1249 W. 6th Avenue

CINCINNATI, OHIO

"ALL GRADES OF WIRE CLOTH MADE OF ALL KINDS OF WIRE"  
**THE NEW JERSEY WIRE CLOTH CO.**



Manufacturers  
**WIRE CLOTH**  
WIRE LATHING  
**POULTRY NETTING**  
WOVEN WIRE FENCING

Our Extensive Facilities Enable Us to Execute Large Orders Promptly at Low Prices

Koebling's Wire Used in All Our Products  
Office and Works, - - - TRENTON, N. J.

## Bar Track Fire Door Hardware

is absolutely the strongest, best and easiest to install.



Door Label

Originated and patented by us.

The style adopted as the standard of the National Board of Fire Underwriters.

MADE BY



Hardware Label

**VICTOR MANUFACTURING CO.**

NEWBURYPORT, MASS.

F. H. Jackson, 7 Clay St., Baltimore, Md.

FRANK A. FURST, President. COLIN McLEAN, Vice-President. MICHAEL T. HORNER, Secretary. JOSEPH J. HOCK, Trans. & Gen'l Mgr.

## Sand

Building Concrete Paving

## Washed Gravel

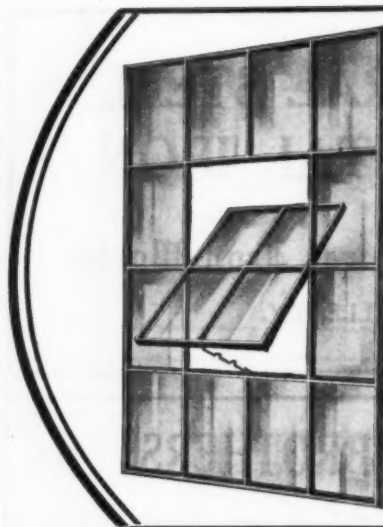
In Car, Scow and Barge Lots

**ARUNDEL SAND AND GRAVEL COMPANY**

BALTIMORE, MD.

OFFICE—806 Fidelity Building.

WHARVES—Pier 2 Pratt St. and Foot of Fell St.



## THINBAR FIREPROOF WINDOWS

The hollow bars, providing ample air space, make these windows exceptionally efficient in fire protection. They retard the spread of fire.

Made of galvanized iron or copper; any gauge or size.

Write for catalogue showing drawings of different types.

**J. F. WAGNER'S SONS CO.**

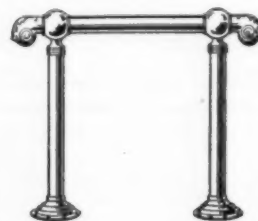
1145 Seventh St.,

LOUISVILLE,

KY.

## McKENNA

## PITTSBURGH



RAILINGS  
GRILLES  
DOOR SADDLES  
KICK PLATES  
HAND ELEVATORS

Write for Catalog

THE FOUNDERS OF OUR COMPANY  
BELIEVED IN FIRST "QUALITY" GOODS

A McKenna Manufactured Article  
Is Known By Its "QUALITY"

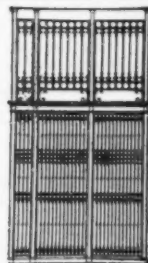
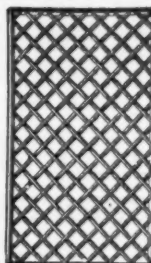
We Make a Specialty Of

STRUCTURAL BRASS WORK OF  
ALL KINDS FOR OFFICE BUILD-  
INGS, THEATRES and CHURCHES.

Our Quotations will interest you.

**McKenna Bros. Brass Co.**

PITTSBURGH, PA.



WE MANUFACTURE

Bank and Office Railing  
Wire and Iron Window Guards  
Elevator Cars and Enclosures  
Wire and Metal Signs

Stable Fixtures, Iron Fencing, Iron Stair Work

FIRE ESCAPES

Ornamental Wire, Iron, Steel, and Bronze Work

SEND FOR CATALOGUE

**THE FRED. J. MEYERS MANUFACTURING CO.**

HAMILTON, OHIO

## FIRE STOPS

APPROVED BY THE LABORATORY

**WINDOWS, DOORS, PARTITIONS**

**VOIGTMANN & CO., 445-59 W. Erie St., CHICAGO**

Southern Representative—S. R. HEWITT, 1202 Candler Building, Atlanta, Ga.

Send for Catalogue



## A Light Truck for a Heavy Load

Every machine shop, repair shop and industrial plant has need of this convenient

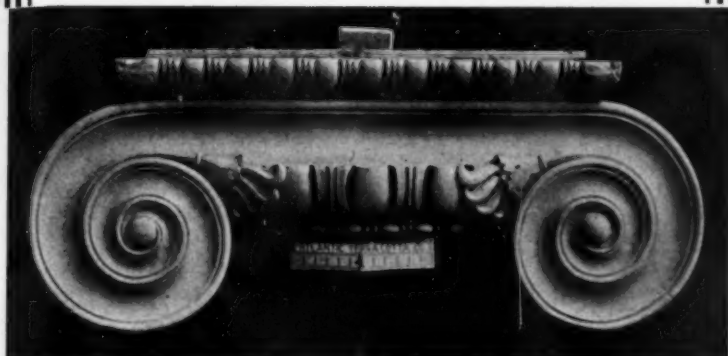
## Bernstein Steel Truck

It's easy running—even under a very heavy load—on everlasting casters.  
Can be supplied with trays or with rack as desired.  
Also makers of Clothes Lockers, Chairs, Stools and emergency Medical Treatment Cabinets.

**BERNSTEIN MFG. CO.**

3rd and Allegheny Aves., Philadelphia, Pa.





Atlanta Terra Cotta Company  
514 Third National Bank Bldg.  
Atlanta, Ga.

Dallas  
Charlotte  
Chattanooga  
Little Rock

Los Angeles  
Louisville  
New Orleans  
Memphis  
Nashville

Norfolk  
Richmond  
San Antonio  
Tampa

Why not build your Garage of substantial material and avoid the cost of maintenance necessary to withstand the ravages of time?



Walter C. Hartman's Garage, Detroit, Mich.

### "AMERICAN" Enameled Brick

will give you LIGHT in the room and in the pit—AVOID ABSORPTION of gasoline and oil, and insure ABSOLUTE PROTECTION against destruction by FIRE.

Among many of the prominent Owners of Garages built of "American" Enameled brick are:— Henry C. Cammon, Henry F. Schwartz and Arthur Du Bois, Greenwich, Conn.; T. T. Watson, Wayne, Pa.; and J. T. McCabe, East Orange, N. J. Their Garages, like their cars, are constructed of the finest material.

No matter what character of building you contemplate erecting

### "AMERICAN" Enameled Brick

will protect your investment and save you money in the end.

Samples—miniature or full size—forwarded, all charges prepaid. Write for catalogue or see our pages in "Sweet's" Index 90-99—1914 issue.

**American Enameled Brick & Tile Co.**

1182 Broadway, NEW YORK

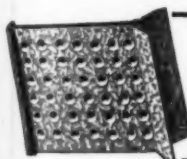
**TILES P & F TILE CO.**  
Birmingham, Ala. 530 Brown-Marx Bldg.  
**CERAMIC — TERRAZZO**  
LARGEST TILE CONTRACTORS IN THE SOUTH

**BEDFORD STONE** SAWED, PLANED, TURNED OR CUT  
Estimates Promptly Furnished.  
F. O. B. Bedford or delivered.  
**BEDFORD STEAM STONE WORKS**  
Incorporated 1888. BEDFORD, IND.

**BRICKS—TILES—FIREPLACES**  
Every Kind—Impervious—Special Designs  
**B. MIFFLIN HOOD BRICK CO.** Atlanta, Ga.

**SOUTHERN FACE BRICK EXCHANGE**  
Headquarters—Brown-Marx Bldg. BIRMINGHAM, ALA.

**Building Tile—Sewer Pipe—Fire Clay**  
Fireproofing, Flue Lining, Stove Flue Pipe and Tops, Thimbles, Wall Partition Tile, Farm Drain Tile, Fire Brick and Clay, Sewer Pipe, Wall Coping, etc.  
WRITE US FOR DETAILS  
**OCONEE BRICK & TILE CO.** MILLEDGEVILLE, GA.  
Manufacturers of Clay Products



**NIAGARA GALVANIZED WALL PLUGS**  
For Building into Walls as a Base for Nailing. A first-class job can be done with them for less money than an inferior job without them.  
Ask for Folder S7-M, Mailed on Request.  
S-78 **NIAGARA FALLS METAL STAMPING WORKS**  
Hardware Specialties Niagara Falls, New York, U.S.A.

WINDOW PLATE ART **GLASS** MIRRORS BEVELING SKYLIGHT  
ESTABLISHED 1872  
**BINSWANGER & CO.** MEMPHIS, TENN.  
INCORPORATED  
STORE FRONT CONSTRUCTION

## Hy-tex The Standard of Quality in Brick



City Hall and Opera House, Durham, N. C.  
Hook & Sawyer, Architects.

Brick is the most enduring, most secure against fire, most comfortable in all weathers, most economical in final cost, and most beautiful among building materials; and

**Hy-tex is the best among brick.**

There is just the brick you want somewhere in the Hy-tex line, offering every variety of form, size, color, and texture known to brickcraft.

Get on the mailing list.

**HYDRAULIC-PRESS BRICK COMPANY**

MANUFACTURERS **Hy-tex Brick** DISTRIBUTORS  
ST LOUIS, MO. WASHINGTON, D. C.  
Largest Makers of Face Brick in the World.

## To Southern Architects—

You can now obtain a high-grade artistic face brick that is made in the South and which lends itself to the most pleasing and harmonious design of distinctive structures.

**KINGSPORT** Vari-Colored Texture Brick

Is a rough texture brick with a wide range of variegated color tones obtained in the burning. They blend harmoniously and give life and individuality to your exteriors.

Samples and prices on request

**Kingsport Brick Corporation**

General Offices

JOHNSON CITY, TENN.

## THE WHITAKER-GLESSNER COMPANY

of which the Portsmouth Steel Company has been a subsidiary, has purchased the property of the latter company, and will hereafter operate it as the Portsmouth Works of the Whitaker-Glessner Company.

The change has been made solely for economical and operating reasons and no change in management or policy is contemplated.

Inquiries for the well-known brands—Portsmouth Open Hearth Steel, Ohio Metal and Portsmouth Iron—formerly made by the Portsmouth Steel Company should be addressed to

**WHITAKER-GLESSNER COMPANY**  
Portsmouth Works  
Portsmouth, Ohio

## TINPLATE *and* BLACK PLATE

uniform gauge  
square sheared  
properly assorted  
no dirt or grease

Send for book "T" (ratio book)



**Jones & Laughlin  
Steel Company**  
AMERICAN IRON & STEEL WORKS  
Pittsburgh

### TIN PAINTED METAL SHINGLES GALVANIZED

With Improved "Lock That Locks." Watertight—Fireproof—Durable—Economical  
Best and Cheapest Made by

**The Hyndman Roofing Co.** Cincinnati, Ohio

### ROOFING GRAVEL

Mine-Run Screenings for Concrete and Road Construction  
**AMERICAN BALLAST COMPANY**

300 Board of Commerce Building

KNOXVILLE, TENN.

### DELAC

#### Reinforced FIREPROOFING

For fireproof partitions in Apartments and Office Buildings, and Exterior Walls of Stucco Houses, replacing wood sheathing and metal lath.

Representatives Wanted among Southern Building Material Dealers.

**Chesapeake  
Roofing & Pipe Covering Co., Inc.**  
Southern Distributors  
30 Light Street BALTIMORE



### Hot Water

cheaply and conveniently furnished.

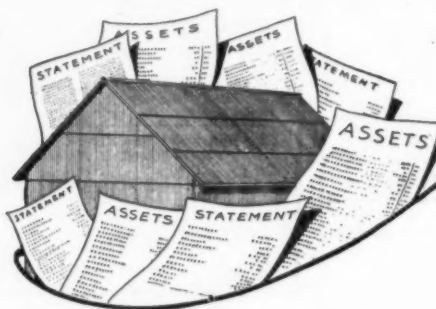
If you have steam the

#### Domestic Steam-Water Heater

will heat your water with either live or exhaust steam at little or no cost for fuel.

Write for circular.

**Keystone Boiler  
& Foundry Co.**  
COLUMBIA, PA.



*A Good Roof  
is an Asset*

A Keystone Copper Bearing Galvanized Roof is a permanent asset. Since 1911 our production of

## Keystone Copper Bearing Sheets

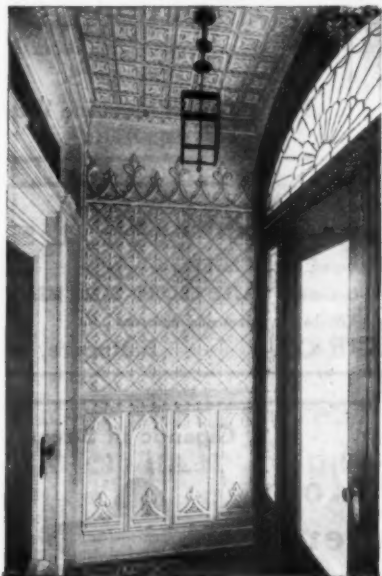
has increased from 5,311 tons to 105,072 tons for the year 1914. Surely a more convincing proof of the merits of these sheets could not be cited.

**American Sheet and Tin Plate Company**  
General Offices: Frick Building, Pittsburgh, Pa.

DISTRICT SALES OFFICES:  
Chicago Cincinnati Denver Detroit New Orleans New York Philadelphia Pittsburgh St. Louis  
Export Representatives: UNITED STATES STEEL PRODUCTS COMPANY, New York City  
Pacific Coast Representatives: UNITED STATES STEEL PRODUCTS COMPANY, San Francisco, Los Angeles, Portland, Seattle



## Here's a Real Business Building Opportunity



Edwards Metal Ceilings and Walls represent big profit possibilities to one man in every locality. Hundreds are making big money right now. You can, too, if you will.

### BIG DEMAND BIG PROFITS

The demand for Edwards Metal Ceilings and Walls isn't coming—it's **here now!** Thousands of home owners and home builders are reading our advertisements in the leading magazines.

### EDWARDS METAL Ceilings and Walls

We **must** have more agents. Territory going fast. Our product is **right**. Our prices are **right**. Don't delay a minute. Write for all the facts N-O-W! Ask for new Ceiling Catalog—it's **free**.

### The Edwards Manufacturing Co. IRON AND STEEL

411-431 Culvert St. Cincinnati, Ohio

Largest Manufacturers of Metal Ceilings, Metal Shingles, Steel Roofing and Sidings in the World

### The East Bangor Consolidated Slate Co. EAST BANGOR, PA.

MANUFACTURERS OF

### GENUINE BANGOR ROOFING SLATE

BLACKBOARDS, STRUCTURAL AND PLUMBING SLATE, SLATE LAUNDRY TRAYS, ETC.

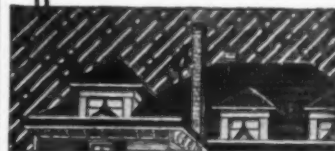
## The Stormproof Roof

ABSOLUTE protection from the elements is assured the house roofed with Cortright Metal Shingles. They interlock and overlap so that no snow or rain, spark or ember can penetrate.

### CORTRIGHT METAL SHINGLES

have all the virtues of other roofings with none of their defects. They last indefinitely and never need repairs. The testimony of satisfied users is the evidence of the stormproof, fireproof, and durable qualities of Cortright Metal Shingles. With these names, we'll also send you complete Cortright descriptive matter. So write now.

Cortright Metal  
Roofing Co.  
Philadelphia  
Chicago



## Red Oxide of Iron Paint

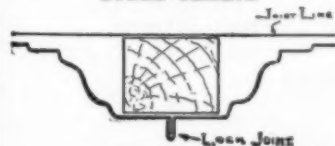
Our Red Oxide of Iron Paint is unexcelled for tin, iron and shingle roofs, railroad cars, bridges, barns, and any place where protection from the weather is desired. It is used by many of the large carriage and wagon manufacturers and paint grinders in the United States.

Let us send you a sample with prices.

Chattanooga Paint Co.

Chattanooga, Tenn.

### "STEEL CEILING"



### See that Joint?

The Acme of perfect construction. Don't nail or slip the joints. Lock them. Full information in catalogue L.

S. KEIGHLEY METAL CEILING & MFG. CO.

No. 7 N. Sharp St., BALTIMORE, MD.; PITTSBURGH, PA.

PRODUCERS OF

E. J. JOHNSON

35 Park Row New York

Black-Green-Red-Purple

Quotations delivered any where

"The Highest Standard of Quality" our motto

Correspondence handled by

special agents

ROOF SLATE  
SLATE BLACKBOARDS



Equitable Building, New York  
Graham, Barnham & Co., Architects  
Thompson-Sterrett Co., Contractors

## 220 Miles — 983 Tons of SHERARDUCT

### Sherardized Rigid Steel Conduit Used in the new Equitable Building

In constructing this, the largest office building in the world, all previous building efforts have been surpassed. Only the finest equipment is being installed—equipment safe, efficient and durable—and is a significant fact that SHERARDUCT Sherardized Rigid Steel Conduit was selected and is being used exclusively throughout.

Write for complete information and samples.

### National Metal Molding Co.

Manufacturers of  
Electrical Conduits & Fittings  
Fulton Building, PITTSBURGH, PA.

Boston New York Chicago Atlanta Denver San Francisco  
Los Angeles Portland Seattle Buffalo Detroit

NATIONAL  
Products  
Sherarduct  
Economy  
Metal  
Molding  
Flextube  
Flexsteel  
Outlet  
Boxes  
Locknuts  
Bushings  
Fittings  
Studs  
Antiflex

### The Southern Marble & Granite Co. SPARTANBURG, S. C.

Sole Owners and Producers of the Famous  
South Carolina Blue Granite  
THE STONE OF QUALITY

### The Green Fuel Economizer Co. MATTEAWAN, N. Y.

Engineers; Builders of Green's Fuel Economizers, Fans, Blowers and Exhausters, Steam Air Heater Coils, Waste Heat Air Heaters, Mechanical Draft, Heating and Ventilating and Drying Apparatus, Draft Dampers and Engines.

### ARCHITECTURAL TERRA COTTA

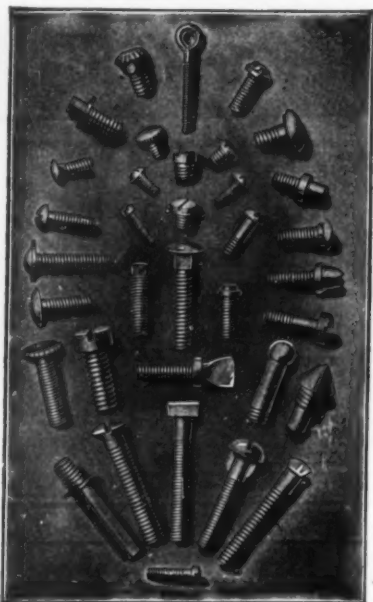
Plaster Ornaments, Metal Windows, Doors, Brick, etc. Can save you money.  
SOUTHERN BUILDING MATERIAL CO. Norfolk, Va.

### Impervious Face Brick

"Ratine" — "Cravenette" — "Cherokee"

STANDARD BRICK CO.

W. E. DUNWODY, Pres. MACON, GA.



### Machine Screws

Supplied in One Gross  
Packages or in Bulk

A Complete Stock at All Times

### SPECIALISTS

In the Manufacture of

High-Grade Rivets and Special  
Screws of all kinds and from all  
grades of material.

If you favor us with one order  
we shall expect more.

Do not forget to send sample  
or sketch when requesting prices.

Also state quantities desired.

*Catalog for the asking.*

**THE PROGRESSIVE  
MANUFACTURING CO.**

TORRINGTON, CONN

High grade work at satisfactory prices

## Phoenix Iron Works Company

MEADVILLE, PA.

**Gray Iron and Semi-Steel  
Castings**

Permit us to bid on your requirements

## MALLEABLE IRON CASTINGS

High Tensile Strength      Exceedingly Tough  
We are equipped to make large and small castings.

*Prompt Shipment Our Specialty*

WRITE US.

GENERAL MALLEABLE COMPANY, Warren, Ohio

## Malleable Iron Castings

of Highest Quality

Annual Capacity 25,000 Tons.

Castings of all descriptions furnished.

Send Blueprints or Samples for Estimates.

**MISSOURI MALLEABLE IRON CO.**

EAST ST. LOUIS, ILL.

## CASTINGS GREY IRON

**D. F. HULL'S SONS**

Hagerstown, Md.

We make a Specialty of Castings of All Kinds

## MALLEABLE IRON CASTINGS

**THE MARION MALLEABLE IRON WORKS**

MARION, INDIANA

## SINGLE ROLL CRUSHERS

FOR ROCK PHOSPHATE AND LIMESTONE

Capacity, 10 to 200 tons per hour for Coarse and Medium Fine Product

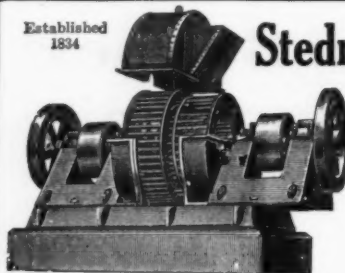
Ore Washers, Jigs, Elevators, Conveyors, Etc.

LET US SEND CATALOG AND PRICES

McLANAHAN-STONE MACHINE CO.

HOLLIDAYSBURG, PA.

Established  
1834



Opened To Show Working Parts,

## Stedman's Disintegrators

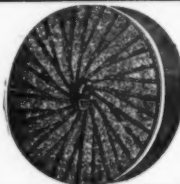
For Grinding and Pulverizing  
OIL CAKES, TANKAGE,  
COAL, CLAY, BONES, Etc.

See our New Catalogue No. 12.

**STEDMAN'S**

Foundry and Machine Works

AURORA, INDIANA, U. S. A.



ESTABLISHED 1847

## "STAR" MILLS

Equipped with ESOPUS STONES

Make the old-fashioned "WATER GROUND TABLE MEAL"

Write for prices and discount

**B. F. STARR CO.**

Baltimore, Md.

Simple in Construction

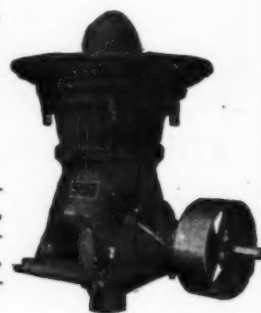
Gigantic in Strength

## McCully Gyratory Rock Crusher

Write for Catalog PM 4-29

### PRINCIPAL PRODUCTS

Rock Crushing Machinery, Mining and Smelt-  
ing Machinery, Cement Making Machinery,  
Wood Impregnating Plants, Loomis-Petti-  
bone Gas Generators, Suction Gas Producers,  
Cyanide and General Steel Tank Work, Wood-  
bury Jigging System, Lead Burning.



## Power and Mining Machinery Co.

Cudahy (Suburb of Milwaukee), Wis., U. S. A.

New York Office: 115 Broadway

District Offices—Chicago, El Paso, San Francisco, Atlanta.

M284.1



# ALPHA

## PHOTO- ENGRAVING COMPANY.

Engravings for the Printer,  
Merchant & Manufacturer

N. E. Cor. Howard and Fayette Streets.  
**BALTIMORE, MD.**





The Raymond System in a big paint factory. Green, red, yellow and other dry colors are ground in this room without dust and with no discomfort or danger to workmen.

More than Seventy-five Different Materials in Hundreds of Different Factories Successfully Handled by the

# RAYMOND PULVERIZING- AIR-SEPARATING SYSTEM

Many of our best customers today are concerns who, previous to *experience* with the Raymond System, were inclined to assume that it could not be successfully applied for *their* material or *their* operating conditions.

If you grind or separate any material you will find it worth while to get our catalogue, which shows the tremendous variety of materials in the reduction and handling of which the Raymond System has proven enormously economical and otherwise advantageous.

In many industries the Raymond System has absolutely revolutionized operating methods by proving its ability to grind material more finely at less expense, to separate impurities in the product, to insure a uniform material, and to transform grinding-rooms from dust-laden poisonous infernos to cleanly work-rooms.

All Raymond installations are rigidly guaranteed to perform what we promise.

Would it not be wise to find out what we may be able to do for you?

We design special machinery and methods for Pulverizing, Grinding, Separating and Conveying all powdered products. We manufacture Automatic Pulverizers, Roller Mills, Vacuum Air Separators, Crushers, Special Exhaust Fans and Dust Collectors.

Cut out this Coupon  
as a Reminder to Write  
**RAYMOND BROS.**  
**IMPACT PULVERIZER CO.**

1304 North Branch St., CHICAGO

about the Raymond System  
of Grinding and Separating.

## INTERNATIONAL CREOSOTING AND CONSTRUCTION COMPANY

GALVESTON, TEXAS

TIMBER SUPPLY:—The Best from Louisiana and Texas

—CREOSOTED—

Ties  
Poles  
Piling  
Cross-Arms  
Bridge Timbers  
Paving Blocks

We are in position to do all classes of framing before treatment.

Capacity 100 million feet B. M. per annum.

Easy access to New Orleans and all Gulf ports west of Mississippi.

Northern points served to advantage.

Western Union, A. B. C., and American Lumberman Telecode

WORKS: Texarkana, Texas, and Beaumont, Texas.

Address General Office, GALVESTON, TEXAS

## Reilly Improved Creosote Oil

IT PERMANENTLY WATERPROOFS

Paving Blocks preserved with the Reilly Improved Creosote Oil never "Bleed," Buckle or Blow Up. Specifications for the asking.

Republic Creosoting Company, Indianapolis, Ind.

## NATIONAL LUMBER & CREOSOTING CO.

Manufacturers of Lumber, Ties, Timbers, Piling, Poles and Paving Blocks

TREATING PLANTS

TEXARKANA, ARK.

Sales Office—HOUSTON, TEXAS

HOUSTON, TEXAS

## SOUTHERN CREOSOTING COMPANY, Ltd., SLIDELL, LA. U. S. A.

Twenty-eight miles from New Orleans, La., surrounded by the finest timber lands in the South. Facilities for shipping by water and rail.

Creosoted Ties, Telegraph Poles, Cross Arms, Timber, Piles and Paving Blocks

Capacity, 22,000,000 feet per annum.

A. B. C. Code used.

Cable Address, Creosote, Slidell, La.

## AMERICAN CREOSOTE WORKS, NEW ORLEANS, LA. STATION B.

Creosoted Cross Arms, Lumber, Paving Blocks, Piles, Poles and Ties

Private free wharf for ocean vessels

at New Orleans

Western Union and A. B. C. 5th Edition Codes.

Plant at New Orleans, La.

Capacity 100 million feet board measure annually

Plant at Louisville, Miss.

## CREOSOTING

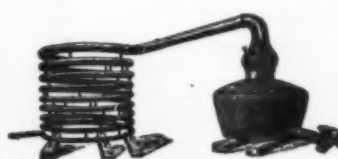
SOUTHERN WOOD PRESERVING CO.  
ATLANTA, GEORGIA

## WOOD BLOCK PAVING

RAILWAY TIES AND TIMBERS  
Cross Arms Poles

## McMILLAN BROS.

## SOUTHERN COPPER WORKS



Repair Work a Specialty and promptly attended to.

Coppersmiths and General Metal Workers. Quotations furnished on large or small orders.

FOUR FACTORIES AT

Savannah, Ga.

Mobile, Ala.

Jacksonville, Fla.

Fayetteville, N. C.

Seamless Turpentine Stills a Specialty



## MOORE DRY KILNS

for drying all kinds of Lumber

35 years' experience

L. MOORE DRY KILN CO.  
Jacksonville, Fla.

## THE STEEL MONARCH OF THE FOREST

## THE MIGHTY MONARCH STEEL STUMP PULLER



Double, Triple and Quadruple Power. Pulls stumps 7 feet in diameter. Pulls 300 stumps a day. Prepares stump land for the use of all other farm implements, and to raise bumper crops. The ONLY Stump Puller guaranteed for FIVE YEARS. For full information address Dept. M. R.

ZIMMERMAN STEEL CO., Londree, Iowa

The Only Up-to-Date  
Way to Get Out

## CROSS TIES

AND SAVE THE WASTE OF STUMPAGE

STANDARD PORTABLE SAW MILLS CO.

NEW ORLEANS, LA.

## Samson Turbines

### Develop More Power

with a given quantity of water than any other turbine of the same dimensions, operating under the same conditions.

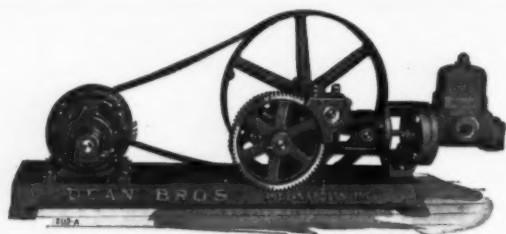
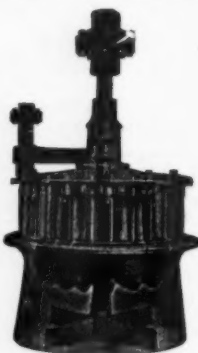
We build these turbines in all sizes and styles, on upright or horizontal shafts, belted or direct connected, single or in pairs. They are suitable for direct-connecting to generators, air-compressors, pumps or other machinery.

If interested send for our latest literature.

**The James Leffel & Co.**

310 Lagonda St.

Springfield, Ohio



### Power Pumps for All Services

Send for Catalogue No 71

**DEAN BROS. STEAM PUMP WORKS INDIANAPOLIS.**

NOT IN THE PUMP TRUST.

## A. D. COOK

Lawrenceburg, Indiana

Manufacturer of

Steam and Power Deep-Well Pumps, Single and Double Acting.

Cook's Patent Brass Tube Well Strainers.

Deep Well Cylinders.

Sucker Rods and Well Tools.

Deep-Well Pumping Systems Installed complete.



Cook Patent Vertical Deep-Well Pumping Engine. "Steam Head."

Write for Catalog No. 11-H



Cook Patent Brass Tube Well Strainer.

## MYERS HYDRO-PNEUMATIC PUMPS

Solve the Problem of Running Water for Suburban and Country Residences, and Afford a Satisfactory Water Supply for Laundries, Apartment Houses, Factories, etc.

They form the important link in a Modern Water Supply System using a high-pressure tank. They pump the air and water at the same time through a single discharge line.

Hand, Windmill or Power Pumps according to the water requirements. Write for Catalog No. HP12.



**F. E. MYERS & BRO., ASHLAND, OHIO**  
Ashland Pump and Hay Tool Works.

## Sullivan Water Boosters,

used in connection with the Sullivan Air Lift pumping system, have the following great advantages for long discharge lines at ice plants, breweries, factories, municipal water works, etc.



Sullivan Booster on a well at Sharpsburg, Pa. Horizontal discharge line 1350 ft. long; final elevation 25 ft.

1. Sullivan Boosters will pump water horizontally, or to an elevation above your well, without the installation of separate pumps or gravity tanks at the wells.

2. Sullivan Boosters use the same air, for this work, that was previously used to lift the water to the surface of the well.

3. Sullivan Boosters may be installed at each of a group of wells, all feeding into a common discharge line.

If interested in this new development, or in air lift pumping of any kind, write us for Bulletin 1271A.

Air Compressors for any conditions of service.

**Sullivan Machinery Company**

Chicago New York Pittsburgh St. Louis Knoxville El Paso

## Are You Dry?

Tell Us

We Guarantee Water—Or No Pay

**LAYNE & BOWLER COMPANY**

The World's Largest Water Supply Developers

Memphis, Tenn.  
Stuttgart, Ark.  
Plainview, Tex.



Houston, Tex.  
Welsh, La.  
Jackson, Miss.

Submit Your DRY PROBLEMS to Nearest Office



### Downie Double Stroke DEEP WELL PUMPS

Steam or Electric Driven, or geared from shaft, are offered for service in elevating large quantities of water from deep Artesian Wells. Single Stroke Pumps for lighter deep well work. Catalog No. 6.

**Keystone Pump & Well Engine Co.**  
BEAVER FALLS, PA.

## HAVE YOU A WELL TO DRILL? ARTESIAN WELL DRILLERS. TEST BORING.

A WELL TO DRILL?

Pneumatic Water System Installed. Tanks and Towers Erected. Pumps, Windmills, Hydraulic Rams, Gas and Gasoline Engines. U. S. Government and Private References.

**Columbia Pump & Well Co.**

522 Twelfth St. N. W. WASHINGTON, D. C.

## PIPE CUTTING AND THREADING MACHINES

All Sizes for Pipe Mills  
Gas and Steam Fitters

This cut illustrates No. 5 and No. 6 Machines.

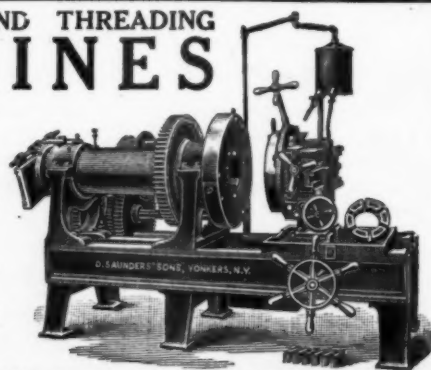
No. 5 has a range of 1½ to 6".

No. 6 has a range of 2½ to 8".

Write for Catalog "C."

**D. SAUNDERS' SONS, Inc.**

Yonkers, N. Y.





## To Pump Sandy or Gritty Water and Water at High Temperatures

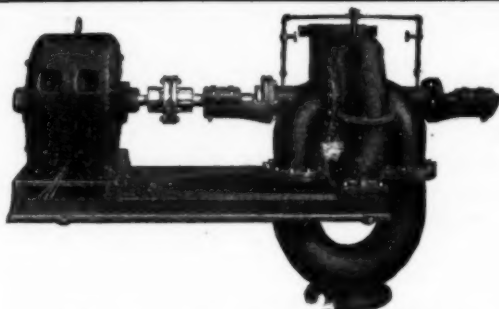


Use Fairbanks-Morse Duplex Ram Pattern Pumps. Plungers are *outside* packed so that stuffing boxes are easily adjusted. Reduction of slippage to minimum greatly increases efficiency.

Ask for Details about the Pump for Your Service

**Fairbanks, Morse & Co.** ATLANTA JACKSONVILLE NEW ORLEANS

938-41J



A  
Motor Driven  
Double  
Suction ERIE  
Pump

Fitted with  
RING-OILING  
OUTBOARD  
BEARINGS and  
FLEXIBLE  
COUPLING  
like illustration

Will solve your irrigating or drainage problems. It will run 24 HOURS A DAY and seven days a week without stopping; or better, if required. It is the most dependable pump at a reasonable price on the market.

Ask for Bulletin B-31 and learn more.

**ERIE PUMP & EQUIPMENT CO., Erie, Pa.**  
Successors to the Erie Pump & Engine Works

## Have You Liquids to Handle That Contain 50% Foreign Matter?

If you have a difficult pumping job where the water is gritty or work that the ordinary pump cannot do, we highly recommend the

## Holland Mammoth Sump Pump

Handles liquids containing 25 to 50% foreign matter as easily as clear water. It will pay you to investigate this pump, as its advantages cannot be fully appreciated until tried out. Catalog free.

Pumps for all purposes.

**Holland Machine Co.**  
412 E. 32nd St., NEW YORK



**DON'T** think for a minute that every Scranton Pump is steam driven—not so! Many of the biggest and smallest are belt or gear driven, or direct connected to electric motors or gas engines. Like to have you look up some of the mechanical points; you'd be interested, undoubtedly.

**SCRANTON** 1447 Meylert Ave. Scranton, Penna.

## R. D. WOOD & CO.

400 Chestnut Street

PHILADELPHIA, PA.

## Centrifugal Pumps

ALL SIZES, BELT DRIVEN AND DIRECT CONNECTED

For Irrigation, Tanneries, Mine Drainage, Phosphate Mining, Circulating Water for Condensers, &c., &c.

The Slogan of the Cameron—"Character: The Grandest Thing."

On the Hard Contracting Job

## CAMERON CENTRIFUGALS



On the hard contracting job there is a steadily increasing volume of water to pump out—there pumping reliability and efficiency show to the best advantage, and there **Cameron Centrifugals** have proved their superiority even more than in other situations. Read the following evidence from the Supt. of a large Coal Co:

"It may please you to learn that the Cameron Centrifugal recently installed in our Lee shaft to take the place of the (naming a leading make), which was worn out in three months—running under the same conditions and driven by the same motor—delivers 20% more water than the other pump did when new."

This Cameron Centrifugal is a Double Suction Volute, as shown in the illustration.

It will pay you to investigate this Cameron superiority.

Write now for free Bulletin 150

**A. S. Cameron Steam Pump Works**  
11 Broadway, NEW YORK Offices the World Over

## SMITH TURBINES

of

## 90% Efficiency and Over



Recent tests of turbines of our manufacture made both at Holyoke and also *after installation* have shown the above efficiency at part gate.

This should prove to every user of turbines and every prospective user that the Smith Turbine of the latest type is the one to purchase and operate.

Poor efficiency means a loss of power and therefore a loss of money.

Both can be saved by installing our turbines. They are designed and built for heads from 5 feet to 650 feet.

WE ALSO MANUFACTURE

Head Gate Hoists, Trash Racks, Sluice Gates, Steel Pipe, Shafting, Gearing, Pulleys, Bearings, etc.

Send for Bulletin M

**S. MORGAN SMITH CO.**  
YORK, PA.

BRANCH OFFICES:

176 Federal Street, Boston, Mass.

644 American Trust Building, Chicago, Ill.



## "LA BELLE" STANDARD PIPE

This pipe is made from bessemer steel, selected with special reference to its use in the manufacture of standard pipe. No steel is accepted that does not meet our rigid chemical and physical requirements.

### Cuts and Threads Easily

Because the steel is of the correct consistency, "La Belle" Standard Pipe cuts and threads easily, adding to the efficiency of the workman handling it as well as to the satisfaction of the purchaser.

*"La Belle" Standard Pipe will be found always true to size as well as uniform in quality.*

*"La Belle" Threads are Perfect"*

### La Belle Iron Works

General Offices: Steubenville, O.

Works:  
Wheeling, W. Va.

Works:  
Steubenville, O.



Laying a Curve with Full Length Pipe.

## CAST IRON PIPE for SERVICE

### Why Experiment?

Of all types, Cast Iron Pipe has the highest flow capacity, greatest resistance to corrosion, and lowest leakage rate. No matter how old, cast iron has always a large salvage value.

Let us prove it.

### United States Cast Iron Pipe & Foundry Co.

General Offices: BURLINGTON, NEW JERSEY

#### SALES OFFICES:

1421 Chestnut St., Philadelphia.  
71 Broadway, New York.  
Oliver Bldg., Pittsburgh.  
Monadnock Bldg., San Francisco.

James Bldg., Chattanooga.  
122 So. Mich. Blvd., Chicago.  
Security Bldg., St. Louis.  
N. W. Bank Bldg., Portland (Ore.).

ALL REGULAR SIZES—2-INCH TO 84-INCH



AMERICAN CAST IRON PIPE COMPANY  
Manufacturers of

CAST-IRON PIPE AND FITTINGS

#### BIRMINGHAM

716 Scripps Bldg., Kansas City, Mo.; 1217 Praetorian Bldg., Dallas, Tex.; No. 1 Broadway, N. Y. City; 461 Market St., San Francisco, Cal.; Box 908, Birmingham, Ala.; 607 New Hayden Bldg., Columbus, Ohio; 849 Plymouth Bldg., Minneapolis, Minn.

#### SALES OFFICES:

#### ALABAMA

IF YOU WANT FIRST-CLASS

## SEWER PIPE

Send your inquiries to the  
CANNELTON SEWER PIPE CO.

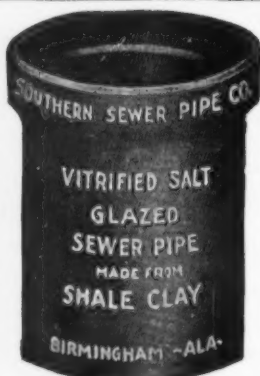
MADE OF FIRE CLAY  
Cannelton, Indiana

### Salt Glazed Sewer and Culvert Pipe

Wall Coping, Drain Tile, Flue Lining, Chimney Tops, Hollow Tile, Fire Proofing, Vitriified Brick, Fire Brick.

BANNON'S PATENT LIDDED PIPE FOR STEAM CONDUITS

P. BANNON PIPE CO., LOUISVILLE, KY.



## Standard SEWER PIPE

With Extra Deep Corrugated Sockets

Made in all sizes. The first cost is not high, and the low cost of maintenance and lasting qualities make it by far the most economical pipe.

Investigate—Write for Catalog.

SOUTHERN SEWER PIPE COMPANY  
BIRMINGHAM, ALA.

Manufacturers of the "Better Kind" of Clay Products



The following makers of Cast Iron Pipe are independent of each other and competitors; inquiries may be sent to any or all of these with assurance of prompt and full response:

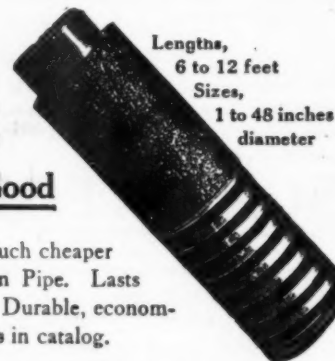
Glamorgan Pipe & Foundry Co.	American Cast Iron Pipe Co.
Lynchburg, Va.	Birmingham, Ala.
Lynchburg Foundry Co.	James B. Clow & Sons
Lynchburg, Va.	Chicago, Ill.
Massillon Iron & Steel Co.	Donaldson Iron Co.
Massillon, Ohio	Emaus, Lehigh Co., Pa.



## WYCKOFF WOOD PIPE

Has Always Made Good

Its use means real economy. Much cheaper to buy and install than Cast Iron Pipe. Lasts as long and delivers more water. Durable, economical and efficient. Get full details in catalog.



Lengths,  
6 to 12 feet  
Sizes,  
1 to 48 inches  
diameter

A. Wyckoff & Son Co. Elmira, N. Y.

A. Wyckoff & Son Co., 551 W. 14th Place, CHICAGO, ILL.

Johnson-Peters Co., Pittsburgh Terminal Warehouse, Pittsburgh, Pa.

Pressures,  
10 to 172 lbs.

Over 50,000  
miles in service



## Warren Foundry & Machine Co.

Manufacturers for 58 years  
of Best Quality of

### Cast Iron Pipe

(Bell and Spigot—Flange)

Water, Gas and Flange Pipe in sizes from 3" to 60" inclusive. Our Motto—"Quality First."

Works—PHILLIPSBURG, N. J.

Sales Office—Bowling Green Bldg., 11 Broadway—NEW YORK CITY

New England Sales Agency  
F. A. HOUDLETTE & SON, 93 Broad Street, BOSTON, MASS.

## Economy and Efficiency Obtained

BY

### Making Your Own Packing

FROM

### ULCO LEAD WOOL

For Steam, Hot Water, Gas or Ammonia

A TRIAL WILL CONVINCE

\$1.00 TRIAL PACKAGE by Parcel Post

UNITED LEAD CO.

111 Broadway New York, City



## AMERICAN PIPE & CONSTRUCTION CO.

ENGINEERS AND CONTRACTORS FOR

### WATER-WORKS

No. 112 NORTH BROAD STREET

PHILADELPHIA

Manufacturers of PHIPPS' HYDRAULIC PIPE

## CUT YOUR COSTS

25%

Saved in  
Fuel Guar-  
anteed.

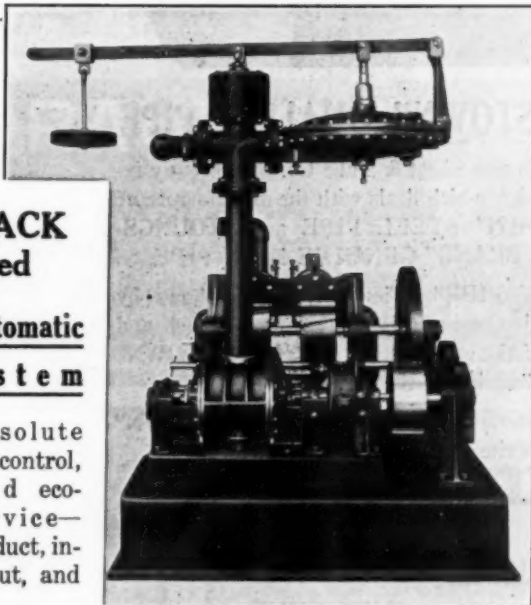
Usually  
Saves

50% to 75%

### NO STACK Needed

### Kemp Automatic Gas System

provides absolute  
temperature control,  
efficient and eco-  
nomical service—  
Uniform product, in-  
creased output, and  
saves fuel.



Write for Catalog

**THE C.M. KEMP MFG. CO.**  
405 East Oliver Street  
BALTIMORE, MD.



## DART UNIONS

Have Bronze to Bronze at  
the joint — No Corrosion

This construction is embodied in our Flange  
Elbow, Tee, Male and Female and Air Pump  
Unions. Ask for circular and sample.

**E. M. DART MFG. CO.**

PROVIDENCE, R. I.

THE FAIRBANKS CO., Agents

Canadian Factory, Dart Union Co., Ltd., Toronto  
ASK YOUR DEALER FOR PRICES

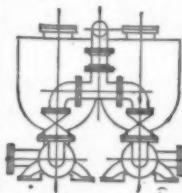


The Air-Tested Union  
With No Inserted Parts.  
The "Safety-First" Union

### Remember those Five "KEWANEE" Reasons

- (1) Brass to iron thread connection—no corrosion.
- (2) Brass to iron ball joint seat—no gasket.
- (3) 125 pounds compressed air test under water—no defective fittings.
- (4) Solid three-piece construction—no inserted parts.
- (5) Easily disconnected—no force required.

**National Tube Company, Pittsburgh, Pa.**



## AUTOMATIC SEWAGE EJECTORS

SIMPLE, EFFICIENT, ECONOMICAL

Also Miller Flushtank Siphons, Sewage Disposal  
Apparatus, Centrifugal Pump Outfits,  
Sewer Jointing Compounds

**PACIFIC FLUSH-TANK CO.**

CHICAGO

NEW YORK

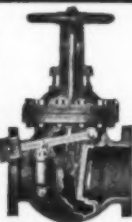


## The Bourbon Copper and Brass Works Company MANUFACTURERS OF FIRE HYDRANTS and STOP VALVES

Water Works and Fire Department  
Supplies and Extension Valve Boxes  
Long Distance Phone, Canal 3297.

618 and 620 E. Front Street

CINCINNATI, OHIO



## Pittsburgh Valve, Foundry & Construction Co. PITTSBURGH, PA.

### VALVES, FITTINGS

AND

### ATWOOD SPECIALTIES

Designers, Manufacturers and Erectors Complete Steam,  
Air, Gas, Water and Hydraulic Piping Systems.

PIPE BENDING A SPECIALTY



ATWOOD

## Glamorgan Pipe & Foundry Company

LYNCHBURG, VA.

Manufacturers of

Cast Iron Water and Gas Pipe, Special  
Castings, Flanged Pipe and  
Flanged Fittings

Gate and Compression Hydrants, Water, Gas and Steam Valves  
General Founders and Machinists

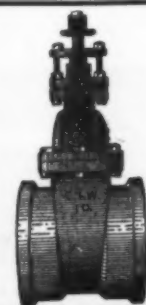


## STANDARD RE-INFORCED SPIRAL PIPE Continuous Interlocking Seam Smooth Inside

USED FOR

Water, Air, Exhaust Steam Dredging, Irrigation, Paper and Pulp Mills, Brine Circulation,  
and suitable for the economical conveyance of any liquid or other substances.

Standard Spiral Pipe Works, 68 W. Monroe Street, Chicago



## COLUMBIAN IRON WORKS

CHATTANOOGA, TENN.

MANUFACTURERS OF

Fire Hydrants, Valves, Valve Boxes,  
Sluice Gates, Meter Boxes  
Water Works Supplies

ALSO MUNICIPAL AND BUILDING CASTINGS

Estimates Promptly Furnished

Eastern Agents:

THE VALVE SALES CO. No. 1 Madison Ave., NEW YORK

## MUNICIPAL CASTINGS

Catch Basins  
Cistern Cover  
Curb Inlet  
Manhole Covers  
Grates  
Coal Hole Thimbles  
METER BOXES

Various sizes and styles to fill all requirements.

Write for description and prices.

Our manufacturing capacity, location and shipping facilities make it profitable to deal with us.

CLARKSVILLE FOUNDRY & MACHINE WORKS  
CLARKSVILLE, TENN.  
Water Works Supplies Plumbing Specialties

## E. E. TITUS FOUNDER and MACHINIST

PETERSBURG, VA.

Manufacturer of the Latest Improved

### VENEER CUTTING MACHINES

With Impression Rolls for BASKETS, ORANGE BOXES, ETC., ETC.  
Butter Dish, Berry Box, Fruit Basket, Orange Box, California Grape Basket and Truck  
Barrel Machinery a Specialty.

CONTRACTS TAKEN FOR COMPLETE OUTFITS

## LUMBER STACKERS

SOULE STEAM FEEDS  
DOGS, LUMBER BUGGIES, ETC.

WRITE FOR CATALOG M

SOULE STEAM FEED WORKS, Meridian, Miss.

# SMITH MACHINES FOR WORKING WOOD

ARE COPIED BUT NEVER EQUALLED

More than 150 different machines for woodworkers. Loose leaf catalogue free, showing full line.  
H. B. SMITH MACHINE CO., SMITHVILLE, N. J., NEW YORK, SAN FRANCISCO, ATLANTA, CHICAGO

### LOW SPEED—LOW POWER DUST COLLECTING SYSTEMS

Manufactured by  
F. E. KING COMPANY, Norfolk, Va.  
Sheet Steel Smoke-Stacks, Heating and Ventilating.  
Agents for Tuec Stationary Vacuum Cleaning Systems.

### Most Complete Saw Mill

BUILT IN THE SOUTH

**\$150 BUYS IT**

GAINESVILLE IRON WORKS, GAINESVILLE, GA.

### MAKE BOX SHOOKS

Up to 24 in. Long, or

### LOOSE BARREL STAVES

Of Finest Quality and at Lowest Cost.  
From Cordwood, Slabs or other Forest Waste,  
by the use of Gerlach Machinery.

THE PETER GERLACH CO., Cleveland, O.

### W. D. MURRAY & CO., Inc.

General Contractors

208 Citizens Bank Building

NORFOLK, VA.



## VULCAN IRON WORKS 327 NO. IRVING AVE. CHICAGO PILE DRIVERS

## WELL DRILLING PAYS BIG MONEY

Own a machine of your own on easy terms.  
Many styles and sizes for all purposes.

Write for Circular.

WILLIAMS BROS.

426 W. State St.  
ITHACA, N. Y.

If you wish to keep posted on the progress of the South read the

**MANUFACTURERS RECORD**

Price \$4.00 a year, or six months for \$2.00

## THE YOUNGSTOWN SHEET AND TUBE COMPANY



YOUNGSTOWN

### "YOUNGSTOWN" QUALITY PIPE

The Youngstown Sheet & Tube Co. has recently issued a small book which deals with the manufacture of "YOUNGSTOWN" STEEL PIPE and "YOUNGSTOWN STAR BRAND" GENUINE IRON PIPE.

"QUALITY PIPE" is its title, and it shows by views how this Company is responsible for each and every detail of the manufacture of "YOUNGSTOWN" pipe from the mining of the ore.

If you are interested to know how "YOUNGSTOWN" pipe is made, write for this book of pictures.



### DISTRICT SALES OFFICES

NEW YORK CITY  
BOSTON, MASS.  
PITTSBURG, PA.  
DALLAS, TEX.  
ST. LOUIS, MO.

PHILADELPHIA, PA.  
CHICAGO, ILL.  
DENVER, COLO.  
SAN FRANCISCO, CAL.  
SEATTLE, WASH.

ATLANTA, GA.







## Cottonseed Oil Machinery Linseed Oil Machinery

Hydraulic Presses  
Hydraulic Pumps  
Cake Formers Meal Cookers  
Hulling and Cleaning Machinery

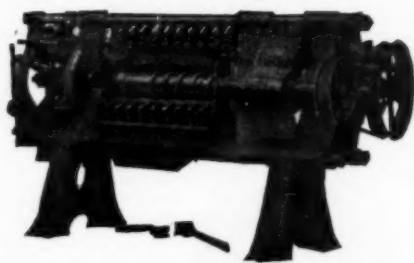
Complete Equipment - Latest and Best Improvements

**Buckeye Iron & Brass Works**

DAYTON, OHIO, U. S. A.

## COTTON SEED OIL MILLS

are not installing the ANDERSON OIL EXPELLER without good reason. It makes better oil and better cake at less cost than other machinery. Works whole seed or meats only. Let us explain.



Oil Mill  
Machinery

**BURRUSS ENGINEERING CO.**

**ATLANTA, GA.**



THE DOUBLE BURNISHED OR DIAMOND FINISHED  
**RIBBED RING**  
MADE BY THE WHITINSVILLE SPINNING RING CO., MASS.

THE BEST THAT EXPERIENCE CAN PRODUCE, THAT MONEY CAN BUY

## SACO-LOWELL SHOPS Textile Machinery

Executive Office: 77 Franklin Street, Boston, Mass.

Southern Office: Rogers W. Davis, Southern Agent, Charlotte, N. C.

Shops: Biddeford, Maine; Lowell, Mass.; Newton Upper Falls, Mass.

## HYDRAULIC PRESSES

For Any Purpose

DIAMETER OF RAM, 2 INCHES TO 30 INCHES OR MORE

HYDRAULIC STEAM, DUPLEX PUMPS VARIOUS SIZES, HIGH AND LOW PRESSURES

BELTED POWER PUMPS

COTTON SEED OIL MACHINERY

**THE CARDWELL MACHINE CO., Richmond, Va., U. S. A.**

## COTTON MILL EQUIPMENT COTTON MILL

### Loom Harness and Reeds

Rawhide and Leather Pickers of all kinds.

Wire Heddles, Heddle Frames and Wire Goods.

Roll Covering Machinery and Supplies.

Belting, Strapping and Pickers.

Lace Leather and Belt Hooks.

Fire Hose and Supplies.

Shuttles, Spools and Bobbins.

Textile Mill Supplies.

**AMERICAN SUPPLY CO.**  
PROVIDENCE, R. I.

## Complete Line of Improved Cotton Seed Oil Mill Machinery

Everything Necessary for the Press Room. Write us for Prices and Descriptive Circulars.

**THE FRENCH OIL MILL MACHINERY CO., PIQUA, OHIO**

REPRESENTATIVES { Mr. PAUL WATSON, Galveston, Texas.  
Mr. W. P. FERGUSON, 615 Empire Bldg., Atlanta, Ga.  
Mr. M. W. FAHERTY, Goodwyn Institute, Memphis, Tenn.



HYDRAULIC PRESS

## THE MURRAY COMPANY DALLAS, TEXAS ATLANTA, GA., U. S. A.

ENGINEERS AND BUILDERS

COMPLETE MODERN OIL MILL EQUIPMENT

Pneumatic Seed Cleaners.

Automatic Linters.

Ball Bearing Automatic Hullers.

Steel Frame Shakers.

Steel Frame Hull Beaters.

Crushing Rolls.

Mechanical Cookers.

Automatic Steam Cake Formers.

All Steel Hydraulic Presses.

Power Hydraulic Pumps.

Everything for an Oil Mill.

Write Us for Estimates and Descriptive Matter



## The American Cotton Oil Co.

27 BEAVER STREET

CABLE ADDRESS:  
"AMCOTOIL," NEW YORK

NEW YORK CITY

**COTTONSEED** { **OIL**  
**SOAP**  
**STEARINE**

**GOLD MEDALS:**

CHICAGO, 1893  
BUFFALO, 1901

SAN FRANCISCO, 1894  
CHARLESTON, S. C., 1902

ATLANTA, 1895

PARIS, 1900  
ST. LOUIS, 1904

**UNION SALAD OIL**

The BEST OIL

The most WIDELY KNOWN

Made at Refineries in

NEW YORK, CINCINNATI, ST. LOUIS, MEMPHIS, NEW ORLEANS, PROVIDENCE



Leesburg Ice Co.,  
Leesburg, Fla.

We Specialize in the  
Design, Manufacture and Erection  
of  
**ELEVATED STEEL TANKS  
AND STAND PIPES**

for Municipal, Railroad and Factory Service. We also  
build oil tanks, coaling stations, bridges, turn tables,  
buildings and structural material.

Write today for our illustrated catalogue No. 4

**Chicago Bridge and Iron Works**

OFFICES: Charlotte, N. C., Room 501-3 Realty Bldg.  
Chicago, Ill., 1320 W. 105th St.  
New York, N. Y., 3113 Hudson Terminal Bldg.  
Dallas, Tex., 1608 Praetorian Bldg.  
Greenville, Pa., 104 Pine St.  
Bridgeburg, Ont., Can., 128 Janet St.  
Monticello, Fla., Box No. 387.  
SHOPS: Chicago, Ill.; Greenville, Pa. (Pittsburgh District);  
Bridgeburg, Ont., Can.



American Locomotive Co., Richmond, Va.

"The Tanks with a Reputation"

**Caldwell Tanks and Towers**

have no weak points to show up after a time to  
impair their service and shorten their life.

The imperishable nature of the Cypress used  
makes the tank last indefinitely, and the scien-  
tific hooping renders bursting and leaking im-  
possible.

The mechanical principles governing the con-  
struction of the towers insure a factor of safety  
that no wind pressure has ever been able to  
overcome.

Hundreds of mills and factories, many in your  
section, are equipped with Caldwell outfits that,  
after years of constant use, are as tight and per-  
manent as when first put up. Our illustrated  
catalogue and book of photo views will interest  
you.

**W. E. CALDWELL CO.**  
INCORPORATED  
LOUISVILLE, KY.

Tanks {Steel-Wood} Towers  
{Galvanized}  
Wind Mills—Pumps—Gas Engines



KANSAS CITY, KANS.  
Capacity 100,000 gals.  
Height 144 ft.

**Elevated Steel Tanks**

Hemispherical and Segmental Bottoms

Manufactured at Pittsburgh, Pa.  
Erected Anywhere

We have special designs for Municipal, Rail-  
way and Industrial service.

Catalog No. 3 sent upon request.

**Pittsburgh-Des Moines Steel Co.**

Pittsburgh, Pa., 803 Curry Bldg. New York City, 54 Church St.  
Dallas, Texas, 1230 Praetorian Building  
San Francisco, Cal., 4316 Rialto Bldg.

**Des Moines Bridge & Iron Co.**

Des Moines, Iowa, 946 Tuttle St.

**STEEL PLATE CONSTRUCTION**

Coatesville Quality



Our plant is one of the largest of its kind in the United  
States. Workmanship the best, deliveries prompt and  
prices low.

Our Engineering Department is at your service.

**DRYERS BOILERS  
STACKS TANKS**

NEW YORK OFFICE, Hudson Terminal Bldg., New York.  
PHILADELPHIA OFFICE, Morris Bldg., Philadelphia.



**ELEVATED STEEL**

**TANKS  
TOWERS**

Mechanically Correct in Design and Workmanship  
Any Size. Erected Anywhere

Structural Iron Work Stand Pipes Boilers  
**R. D. COLE MFG. CO. NEWMAN, GA.**



**TANKS ON TOWERS  
STANDPIPES**

**STEEL RIVETED PIPE**

Tanks Anywhere for  
Any Service

If Made of Steel We Make It

**Structural Steel Work**

**Chattanooga Boiler & Tank Co.**  
CHATTANOOGA, TENN.



Insane Hospital,  
Nevada, Missouri

**Tanks and Towers  
Steel Storage Tanks  
Plate Work**

**Structural Steel Work**

**MEMPHIS STEEL  
CONSTRUCTION COMPANY**  
OF PENNSYLVANIA

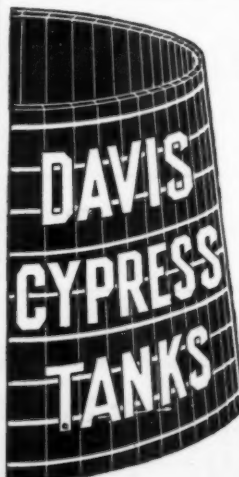
Plant at Greensburg, Pa.  
(In the Pittsburgh District). OFFICES { 1601 First Nat. Bank Bldg.  
Pittsburgh, Pa.  
Greensburg, Pa.  
Memphis, Tenn.

**Starrett Tools**

Every machine shop toolroom, and every  
mechanic should be equipped with Starrett  
Tools. The line includes steel rules, steel  
tapes, steel squares, micrometers, cal-  
ipers and dividers, vernier calipers, sur-  
face gages, hack saws, etc. Any tool  
or hack saw bearing the name "Starrett"  
is guaranteed by the biggest toolmaking  
organization in the world.

Send for our 320-page catalog No. 20 E. C.,  
describing 2100 styles and sizes of fine tools.

**The L. S. Starrett Co. Athol, Mass.**  
World's Greatest Tool Makers 42-445



**Heat and  
Moisture Proof**

We build tanks for every  
purpose.

Tell us your needs, and  
let us give you designs and  
prices, both of which will  
appeal to you.

**G. M. Davis & Son**  
PALATKA, FLA.

**LIGHT FOR YOUR NIGHT SHIFT**

Milburn Portable Acetylene Lights—100 to 20,000 Candle-power.  
Milburn Oxy-Acetylene Plants for Welding and Cutting.

**ALEXANDER N. MILBURN CO. BALTIMORE, MD.**



## THE GRUNEWALD

THEO. GRUNEWALD, Proprietor



New. Modern.  
Best Equipped and Finest  
Hotel in the South

Cost Over \$2,000,000

400 Rooms European Plan

### RATES:

\$1.00 and Upwards. With Bath,  
\$2.50 and Upwards

## NEW ORLEANS

## THE HAMMOND HOTELS THE HOTEL ESSEX

Opposite South Terminal Station  
BOSTON, MASS.

European Plan.  
Rates Moderate.  
Absolutely Fireproof.

Free Transfer Baggage from and to Station.  
Terminal of Trains from South and West.

DAVID REED, Manager

American and European Plans

Open All the Year Around

## DE SOTO HOTEL TAMPA, FLORIDA

New, Spacious and Airy. All Modern Conveniences. Two Blocks from the  
Business Centre. Suites of Any Size on Short Notice.  
WRITE OR WIRE FOR RESERVATIONS

W. L. PARKER, Manager

Western Union Office in Lobby

## Murphy's Hotel and Annex, RICHMOND, VIRGINIA

The largest, most modern and best located house in the city,  
being situated on Broad Street in the heart of the retail and  
theatrical district, and on direct car lines to all railroad sta-  
tions. European plan, \$1.00 per day up.

JOHN MURPHY, President

JAMES T. DISNEY, Manager

## TWO HOTELS OF PECULIAR EXCELLENCE IN TWO CHARMING OLD SOUTHERN HISTORIC CITIES

MOBILE, ALABAMA

### The CAWTHON (FIREPROOF)

Accommodates 400. Fine Golf Links.  
Yachting, Hunting, Fishing. Shell  
Roads. Superb Climate. Winter  
Garden Cafe.

European Plan

Address for Book

C. B. HERVEY, Manager

PENSACOLA, FLORIDA

### The SAN CARLOS (FIREPROOF)

Accommodates 400. Fine Golf Links.  
Yachting, Hunting, Fishing. Shell  
Roads. Superb Climate. Orchestra.  
Rendezvous of U. S. Navy.

European Plan

Address for Booklet

GEORGE H. HERVEY, Manager



## THE TRIP TO PANAMA

is most enjoyable through the logical gateway,  
which affords a visit to quaint, historic

NEW ORLEANS

AND

## The St. Charles

Finest All-Year Hotel in the South  
Under efficient management from Waldorf-Astoria,  
New York City.

EUROPEAN PLAN. MODERN. FIREPROOF.  
ALFRED S. AMER & CO., Ltd., Props.

Also THE EDGEWOOD, Greenwich, Conn.  
"New York's Ideal Suburban Hotel"

MAY TO OCTOBER.

## Sturtevant

(REG. U. S. PAT. OFF.)

## Good Service Has Created Our Business

Perhaps the chief reason for the success of Sturtevant Fans is that Sturtevant Service goes with them—and Sturtevant Service is worth having.

Sturtevant Engineers know just what Sturtevant Fans will do and they recommend the right fan for the right place. They work out the most profitable combination of apparatus for the particular work in question.

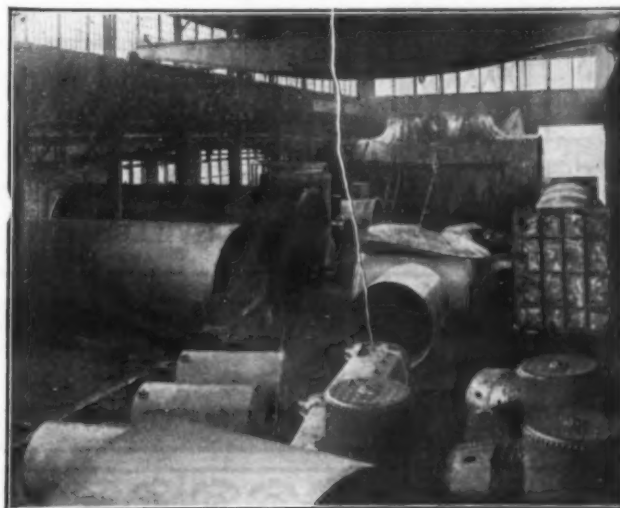
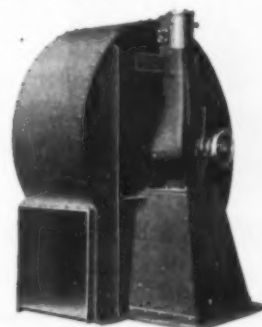
In short, Sturtevant Service is a guarantee that the fans will be installed in the right place and will give satisfaction.

Good Service is probably the chief cause of our huge business. We are by far the largest manufacturers of fans in the world.

Why not let Sturtevant Engineers help you on your next job?

## B. F. Sturtevant Company

Hyde Park, Boston, Mass.  
and all principal cities of the world



WE BUILD ANYTHING IN

## STEEL PLATE CONSTRUCTION

With either Welded or Riveted Seams

WE SPECIALLY ON EQUIPMENT FOR

WOOD ALCOHOL AND TURPENTINE  
FACTORIES

Send Us Your Specifications and Inquiries

## STRUTHERS-WELLS COMPANY

Works and Main Office, Warren, Pa.

New York Office, 50 Church Street

## When Building Bridges

Bear in Mind the Qualities of

# CONCRETE

**PERMANENT**—No other equal.

**FLOOD RESISTING**—No other can claim this.

**NO MAINTENANCE**—No painting, re-flooring, replacing.

**CAPACITY**—No decrease of capacity with age.

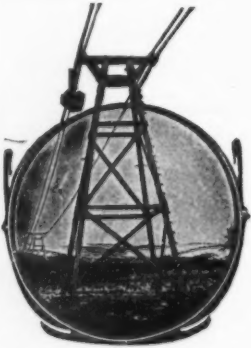
**NOISELESS**—No vibration, loose rivets, bad floors.

**BEAUTY**—No other can attain more.

**THE COST** is governed by the design adopted, the equipment and organization of builder, and local conditions. Ordinarily conditions are favorable to **CONCRETE**, and it will pay you to investigate. Remember, **CONCRETE** has its **QUALITIES**, and the saving in maintenance alone is a deciding factor. **ECONOMY** can be attained only by experienced and specially trained designers, and **BEST RESULTS** by specially equipped contractors. Get our proposal.

**C. W. REQUARTH COMPANY, Charlotte, N. C.**  
ENGINEERS and CONTRACTORS

Operations Confined to the Permanent Class of Structures.



## YELLOW STRAND WIRE ROPE

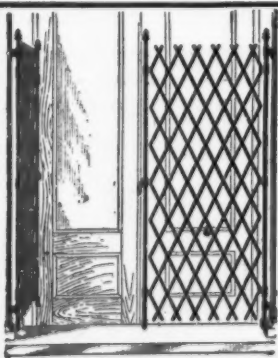
### AERIAL TRAMWAYS

Manufactured by

**BRODERICK & BASCOM ROPE CO., 809 N. Main St., ST. LOUIS, MO.**

WORKS (St. Louis, Mo.  
Seattle, Wash.)

BRANCHES (76 Warren Street, New York  
Seattle, Wash.; San Francisco)



## Collapsing Gates

Elevator Cabs and Enclosures  
Ornamental Iron Work

GET OUR CATALOGUE

**Dow Wire & Iron Works**  
LOUISVILLE, KY.

## ROLLING Steel and Wood DOORS

APPROVED FIRE DOORS

**THE KINNEAR MANFG. CO. COLUMBUS, O.**



For nearly half a century NICHOLSON Files have done the best work, simply because every file is rigidly tested for soundness, temper and cutting qualities before it is boxed and sealed.

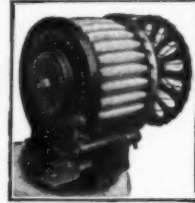
Sold by all leading dealers

**FOR YOU**—A forty-eight years' education on Files in an hour.  
Read our booklet "FILE PHILOSOPHY."  
Sent FREE on request.

**NICHOLSON FILE CO., Providence, R. I.**

## NORTHROP LOOMS

TRADE MARK REGISTERED



**EARN** More Wages for the Weaver  
Larger Dividends for the Mill  
**DRAPER COMPANY**

HOPEDALE, MASS.



## SEWER PIPE

SANITARY—ECONOMICAL—PERMANENT

27", 30", 36" and 42", or any other size

**BLACKMER VITRIFIED  
SEWER PIPE**

is treated of in our publication—"Deliverance From Plague." It is a handsome booklet. Every sanitary engineer should have a copy. Mailed for the asking.

**BLACKMER & POST PIPE CO.**  
Wainwright Bldg. ST. LOUIS, MO.

## STRUCTURAL IRON WORKS

Foundry and Machine Shops

**GRAINGER & CO., Inc. ESTABLISHED 1858 Tenth St., Louisville, Ky.**

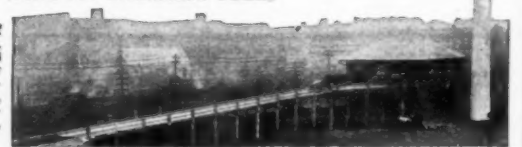
## DECARIE REFUSE DISPOSAL PLANTS

For Municipalities and Institutions

Cut shows plant at Roanoke, Va. Operating cost 31 cents per ton.  
Mechanically perfect. Clinker analyses 97% mineral ash.

**STACY-BATES CO., Selling Agts. McKnight Building  
Minneapolis, Minn.**  
Write for Literature Today

Southern Representatives  
T. L. Cox & Co., Board of  
Trade Bldg., Little Rock,  
Ark.; G. A. Cleaver, 718  
Maison Blanche Bldg., New  
Orleans, La.; H. P. Strat-  
ton, 201 Mechanics Bldg.,  
Petersburg, Va.; San An-  
tonio Mach. & Supply Co.,  
San Antonio, Texas.



## The Mecklenburg Iron Works

Will be glad to answer all correspondence from parties who  
need or expect to need

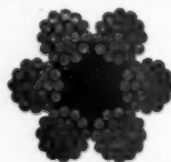
**Machinery for Handling  
GOLD, IRON or COTTON**

as they have been manufacturing such machinery for thirty  
years, and can give entire satisfaction. Their address is

M. I. W.

Charlotte, N. C.

M. I. W.

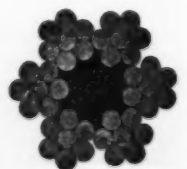


For service on cranes, derricks,  
steam shovels and dredges, and  
for mine and other haulages, order

## Roebling Wire Rope

Made first in 1840; its manufac-  
ture has been conducted ever  
since without interruption.

**John A. Roebling's Sons Co.**  
ATLANTA, GA. TRENTON, N. J.





# MANUFACTURERS RECORD

A WEEKLY SOUTHERN INDUSTRIAL, RAILROAD AND FINANCIAL NEWSPAPER

Trade-Name Registered in the U. S. Patent Office

VOL. LXVII. No. 7.  
WEEKLY.

BALTIMORE, FEBRUARY 18, 1915.

\$4.00 A YEAR.  
SINGLE COPIES, 15 CENTS.

PUBLISHED EVERY THURSDAY BY THE  
MANUFACTURERS RECORD PUBLISHING CO.

RICHARD H. EDMONDS, Pres. VICTOR H. POWER, Treas.  
FRANK GOULD, Vice-Pres. I. S. FIELD, Sec'y.

RICHARD H. EDMONDS, Editor and General Manager

EDWARD INGLE, Managing Editor

BRANCH OFFICES:

NEW YORK, 52 Broadway CHICAGO, 1409 Fisher Bldg.  
BOSTON, 733 Old South Bldg. ST. LOUIS, 627-630 Century Bldg.

Subscription \$4 a year (payable in advance) to United States, Mexico, Cuba, Porto Rico, Hawaii and the Philippines. To Foreign Countries (including Canada) in the Postal Union, \$6.50 a year.

[Entered at the Baltimore Postoffice as second-class matter.]

In order to avoid delays, all correspondence pertaining to news or advertising matters should be addressed directly to the MANUFACTURERS RECORD, Baltimore, Md., and not to individual editors, officers, employees or any branch office.

## JOHN LANGBOURNE WILLIAMS.

RICHMOND, his birthplace and the place of his life work, lost last week in the death of John Langbourne Williams a valuable citizen of the type of men who have made Virginia's capital the flourishing, progressive city that it is. Born in 1831, trained at Richmond Academy and graduated with the degree of master of arts at the University of Virginia, he was at first inclined to enter the law, and for a short time while preparing himself for the legal profession he taught school in Essex county, Virginia. At the age of twenty-seven, though, he became connected with the banking-house of Lancaster & Co., and maintained relations with it until the close of the war. Beginning banking on his own account and in a small way, he lived to see the house of John L. Williams & Sons a power in the country's financial affairs, especially as they concerned the South.

It required courage and determination of a high order to start a banking institution in Richmond within a few months after the close of hostilities in the sixties and marked personal ability to bring it to a commanding position. In those days there was much inclination among the younger men of the South to seek careers anywhere but in their native States. The country as a whole was bettered by the migration of those young Southerners, but their own section suffered in proportion. John L. Williams was one of those who found his call in his birthplace. He was notably equipped to answer the call and to make the most of it. He had faith in his city, State and section and confidence in himself. From small beginnings his business grew until his banking-house became an important factor in material development, not only in Richmond, but in many other parts of the South, particularly as that development called for the building up of street railways and steam roads. Starting in Richmond with the first electric railway line that was a commercial success, this business of financing such roads extended to lines in other Virginia cities, in Tennessee, in Georgia and in Maryland, and his astute and farseeing mind and energy made possible the Seaboard Air Line Railway and the Georgia & Florida Railroad. With him came to be associated in time four of his six sons and a son-in-law, upon whom he left an impress for the benefit of themselves and of every activity in which they should be engaged that may hardly be estimated fully.

His strong character found expression in other lines than finance. A close student of literature and public affairs from his young manhood to the last of his days, he was a frequent contributor to the columns of the secular and religious press, and all of his writings revealed an original spirit kept well in hand by his natural good judgment and conservatism. In parish activities of the church of his choice and in its diocesan and general legislative

councils he was diligent and efficient for nearly sixty years, and was an executive officer in a number of Richmond and Virginia religious and philanthropic undertakings. Married in 1864, he had the happiness to have with him to the last all his family save one child of nine. As a financier he was the soul of integrity, as a citizen an ever-fresh source of public spirit and as a man an exemplifier of the domestic and social virtues that are only to the advantage of the community fortunate enough to enjoy their daily manifestation.

## TO OPEN UP THINGS IN A BUSINESS WAY

WHAT do you think of the outlook for things to open up in a business way, and particularly in a financial way?

That is the question asked of the MANUFACTURERS RECORD by A. E. Lewis, an architect of Miami, Fla. Perhaps an answer may be approached by way of the suggestion in an incident of a few days ago in a small Southern town. A farmer of some standing entered the establishment of a merchant to whom he owed \$40. Pressed for payment of the debt, he reached down into his pocket, brought forth a healthy roll of banknotes with quite a number of gold notes as the center, peeled off a \$10 gold note and paid it to the merchant "on account." That was all. The debtor gave no indication that he had immediate use for the rest of the roll of currency. He simply declined to meet his full indebtedness. If several million debtors, with ready money in their pockets, refuse to meet their obligations, refuse to pay for goods that have come into their possession, not with any idea of repudiating their debt, but simply in response to some undefined and unorganized impression that more important use for the money may develop, things will not "open up in a business way, and particularly in a financial way," for some time to come. The most useless money in the world is money stowed in the pocket or hoarded in some other way. It ceases for a time to be currency. Currency moves. In its moving it keeps other things moving. It is the same as to other influences to progress and activity. If certain things must be done sooner or later, the sooner they are done, if facilities are at hand, the better it will be later. Mr. Lewis writes that the trustees of schools in a Florida community are holding off building on account of business depression, and he adds:

I made a contract with the board several months ago for two schools, and they later ordered me to hold the matter for a while on account of the depression in business there.

If funds are available for the building of these two schools, now would seem to be the time to build them. Even if materials and labor might not be had at lower terms than usual, the very fact of the authorities undertaking work of the kind would "open up" some things, would spur activities and have a most encouraging effect upon citizens generally. In a number of communities in the South the campaign of "Build Now" has been furthered by just that sort of logic. The results have justified the efforts. Even where funds are not available, they may become so through the flotation of public securities. Many men engaged in financing such propositions agree that bond issues for public improvements are becoming more and more desirable as investments, and that there is little in existing conditions to prevent a ready marketing of the securities. Only the other day Baltimore disposed of issues of \$8,500,000 bonds for municipal improvements upon advantageous terms, and last Thursday

the voters of Rome, Ga., authorized a bond issue of \$100,000, of which \$75,000 are to go into the construction of a municipal building and auditorium and \$25,000 into the city's share of a county hospital. In the county \$200,000 are to be spent shortly upon three concrete bridges, and the announcement has been made that "the beginning of this work will be the forerunner of a general building activity in the community." There can be little doubt about that.

But the campaign should be widened into one of "Do Now." That means do whatever one is able to do that must be done. The reasons for hesitating about doing more are passing. There never has been a good reason for not doing anything. Uncertainty in many dominating fields caused by the outbreak of the European war naturally induced caution; internal affairs were provocative of hesitation in business. The war continues, with no end in sight. Some internal matters are in the way of betterment. Industries are reviving. Men are again finding steady employment after enforced idleness. The cotton situation, so acute a few months ago, has a far more hopeful aspect, with a fortunate realization, by the way, that the relative importance of cotton in national economy is not as great as had been imagined, and the bounty of other crops has largely overcome the loss in the depressed price of the Southern staple. But six months of war have not ruined the United States, and six more months or it, or twelve more months of it will not ruin us. In spite of war, things must be done in this country. In the doing of them the people will escape from the psychologic effects of the foreign trouble, and will stir again all the activities upon which the prosperity and the growth of the country depend. Things will open up in a business way, and particularly in a financial way.

But the opening up will not happen if individuals hoard their cash or their energies. Hoarding is hobbling.

## SIGNIFICANT FARM FACTS FOR THE SOUTH.

THIRTEEN farm crops in 1914 had an estimated value, based upon prices as of December 1, of \$4,936,893,000, an increase over 1913 of \$31,012,000. The increase in 1913 over 1912 was \$170,456,000. The thirteen crops were corn, wheat, oats, barley, rye, buckwheat, flaxseed, rice, Irish potatoes, sweet potatoes, hay, tobacco and lint cotton. The depression in the price of cotton, following the temporary closing by war of foreign markets usually taking about 66 per cent. of the American crop, was responsible for the comparatively slight advance in the value of the thirteen crops in 1914 over 1913. That depression was felt chiefly in the South, where it accounts for the decrease in value of the thirteen crops from \$2,979,279,000 in 1913 to \$1,751,731,000 in 1914, a difference of \$327,548,000. The official estimate of the value of the 1914 cotton crop as of December 1 showed a decrease of \$305,779,000. That, however, did not take into account the fact that the final estimate of the value of the 1913 crop was \$62,000,000 greater than the December 1 estimate. So the estimated decrease should be considered as \$367,779,000. Developments in cotton since December 1, though, must modify the estimated decrease. In 1913 up to that date 7,964,440 bales, or 54 per cent., of the crop had come upon the market. The first four months of 1914 brought only 5,187,407 bales, or 32 per cent., of the estimated 1914 crop into sight. Since then nearly 6,000,000 bales have come into sight, with an advance in the price averaging about \$6 a bale. If the remainder of the crop shall be sold at the same price—and there are indications that it may bring higher prices—between \$65,000,000 and \$70,000,000 must be added to the estimated

value of the whole crop, thus reducing the decrease in value under 1913 to something like \$300,000,000. Should the war end within a few weeks as suddenly as it began, it might mean even greater recovery from the loss.

But there is absolutely nothing in the situation justifying in the slightest degree the planting of an acreage in cotton this year approaching in area that of 1914. On the contrary, a study of the values of the thirteen crops in 1913 and 1914 will clearly mark out the path of wisdom for the South. The values are shown in the following table:

Value of Thirteen Crops.

	1914.	1913.
Alabama .....	\$114,255,000	\$156,175,000
Arkansas .....	81,883,000	103,132,000
Florida .....	19,405,000	19,688,000
Georgia .....	155,167,000	217,753,000
Kentucky .....	118,325,000	110,654,000
Louisiana .....	64,767,000	73,335,000
Maryland .....	42,893,000	35,089,000
Mississippi .....	93,882,000	130,622,000
Missouri .....	192,981,000	174,520,000
North Carolina .....	124,918,000	150,203,000
Oklahoma .....	134,159,000	111,532,000
South Carolina .....	101,373,000	139,076,000
Tennessee .....	106,456,000	114,249,000
Texas .....	288,335,000	400,231,000
Virginia .....	73,995,000	100,807,000
West Virginia .....	38,937,000	42,213,000
Total .....	\$1,751,731,000	\$2,079,279,000
United States .....	\$4,936,893,000	\$4,905,881,000

But four of the Southern States, Kentucky, Maryland, Missouri and Oklahoma, and only one of these, Oklahoma, really a cotton State in the strictest sense, had an increase for the thirteen crops in 1914 over 1913. Some of them, especially Virginia and West Virginia, were affected by the decreased production and the fall in values of tobacco, hay, Irish potatoes and sweet potatoes. But the decrease of \$327,548,000 for the South as a whole was due primarily to the cotton situation. It is gratifying to note, however, that, in spite of the decline in cotton values, the South, as compared with the rest of the country, maintained fairly well its tendency toward greater diversification of crops, as indicated in the following table, comparing the actual value of all farms crops in 1909, with the value of all crops in 1914, estimated according to the proportion which the value of thirteen crops in 1909 represented of the value of all crops in 1909:

Value of All Crops.

	1914. Estimated.	1909. Actual.
Alabama .....	\$152,340,000	\$144,287,000
Arkansas .....	112,169,000	119,419,000
Florida .....	47,329,000	36,142,000
Georgia .....	198,932,000	226,595,000
Kentucky .....	144,299,000	138,973,000
Louisiana .....	104,463,000	77,336,000
Maryland .....	59,573,000	43,920,000
Mississippi .....	128,605,000	147,316,000
Missouri .....	227,036,000	220,664,000
North Carolina .....	173,497,000	142,890,000
Oklahoma .....	159,713,000	133,454,000
South Carolina .....	131,653,000	141,983,000
Tennessee .....	138,294,000	120,706,000
Texas .....	351,628,000	298,133,000
Virginia .....	104,218,000	100,531,000
West Virginia .....	55,793,000	40,375,000
Total .....	\$2,289,542,000	\$2,132,724,000
United States .....	\$6,217,746,000	\$5,486,615,000

Here it appears that the value of all farm crops in 1914 was greater than that in 1909 in all the Southern States except Arkansas, Georgia, Mississippi and South Carolina, and that, too, including the value of cotton. Eliminating that item, the value of crops in the South increased between 1909 and 1914 more rapidly than in the rest of the country, the increase for all crops being from \$1,444,374,000 to \$1,769,926,000, or by \$325,552,000, equal to 22.5 per cent., in the South, and in the rest of the coun-

try from \$3,353,891,000 to \$3,928,204,000, or by \$574,313,000, equal to 17.1 per cent. Moreover, even including cotton with the estimate, the South, with 34,626,000, or only 35 per cent., of the 98,781,000 of the total population, occupying 945,000 square miles, or only 31.7 per cent. of the total land area of 2,974,000 square miles of the country, raised in 1914 crops having a value equal to 36.8 per cent. of the total value of the crops in the whole country, a proportion that is likely to increase with the actual increase of the value of cotton over the December 1 estimate.

The significance of that fact should not be neglected by the South. That section will continue to raise cotton, to be sure. But in the immediate future the strong demand will be for other crops. Practically every crop that is raised in other parts of the country can be raised in the South in addition to crops virtually monopolized by the South as a producer in continental United States. With its natural advantages, the South ought to produce 60 per cent. of the crops of the country, regardless of cotton. Those advantages fully utilized, the exaggerated importance of cotton in agricultural economy would be a thing of the past.

### WASTE OF TAXPAYERS' MONEY UPON GOVERNMENT COMMISSIONS.

YOU might just as well finish April 1, or tomorrow, or ten years from now—

Yes; the people who promoted this legislation just arbitrarily concluded that the job would take three years. You could go on with the job for 300 years. It is a constantly-changing thing.

The implied interrupted question in the first paragraph quoted was asked by Congressman Frederick H. Gillett of Massachusetts. The answer came from Frank P. Walsh, chairman of the United States Commission on Industrial Relations seeking additional appropriation.

The incident belonged to a discussion of the sundry civil appropriation bill in the National House of Representatives, in the course of which a statement that, with contemplated appropriation of \$100,000 for the commission, the aggregate would be \$450,000, led Representative John Hampton Moore of Pennsylvania to place on record the following for the enlightenment of the taxpayers of the country:

This Industrial Relations Commission was established by law less than three years ago. It will expire August next. It was appointed without any special authority under the law, except to inquire as to the differences between capital and labor, the differences between rich men and poor men, and \$100,000 was given it for the first year of its work. When the bill was in the House the present Secretary of Labor, Mr. Wilson, who fathered it, stated that the commission was not to have any power to settle controversies, and that its only purpose was to inquire into the differences existing between capital and labor, and that it would report to Congress. It has been operating for two and one-half years, and the appropriations for continuing it have grown until approximately a half a million dollars have been spent to send this handful of men and one woman into various cities of this country to drag people from their offices and their workshops to tell them what they know, and, although this testimony has been taken stenographically, we find from the testimony of the chairman of the commission before the Committee on Appropriations that the commission has not printed any reports; that it does not expect to print any reports, and that it is going to leave it to Congress to find the money to print anything Congress may want of the testimony that has been taken. Now, the commission having been at work for two and a half years, going into various cities, being heralded by the newspapers, and having this testimony taken stenographically, it is to be presumed that a vast amount of copy has been accumulated, but the chairman of the commission appears before the Committee on Appropriations and blandly says that it is up to Congress to do what it pleases—print the testimony or not.

Asked how the commission has "spent this enormous sum of money," Representative Moore continued:

They have spent it hiring professors and assistants and gentlemen familiar with the labor situation to go around the country and work up theories; they have employed people in various ways and have got them on their staff. They have taken learned men from the colleges—men who have hobbies—and they have put them at work; and if

some of the reported utterances of the chairman of this commission are correct, it would appear that the general disposition is to spend this money in the propagation of ideas and theories based very largely upon what is known as modern socialism. The trend has been toward proving the advisability of Government ownership; and after this vast amount of money has been spent, the chairman of the commission tells the committee that if Congress wants anything in the way of printed matter it is at liberty to go ahead and pay for it.

With its "field staff of from thirty to fifty men and women" and other expenses, it ought to be an easy matter for the commission to find use for \$100,000 annually of the taxpayers' money, and to cultivate the hope that "one of the results of this commission's work will be the establishment of a permanent body charged with duties measurably similar." Indeed, a permanent body might readily fulfill Chairman Walsh's estimate that "You could go on with the job for 300 years." But why go on with the "job" another day? Why consider even for a moment spending other thousands of dollars in employing a field staff of from thirty to fifty men and women, to say nothing of printing the testimony that has been taken stenographically?

The commission has only recently concluded its performance in New York city. It had before it quite a group of individuals who usually are to be found in the spotlight of the provincialism of the metropolis, whatever may be the provocation, individuals whose opinions on almost any subject may generally be forecast, but contact with whom under any condition appeals to a certain kind of jenkinsism. It gave occasion for limited journalistic jenkinsism to exploit some of the members of the commission. Its proceedings called for the use of several columns of the metropolitan papers daily. Sardonic humor at the expense of one's pensioners, confessions of faith—for publication—of wholesale "philanthropists" and airing of jealousies of professional and salaried "uplifters" were the burden of the proceedings.

But was one single fact of value to the country theretofore undiscovered dragged into publicity?

Therefore, in this day of jitney vaudeville, why should the taxpayers of the country continue to back up with appropriations from the public funds such performances as those staged by the United States Commission on Industrial Relations? Haven't the members of the field staff of from thirty to fifty men and women any other opportunity for other legitimate occupation that might place them in the ranks of the producers?

In the past ten or fifteen years the country has been staggering under the weight of commissions of sundry and divers kinds, every new commission being an acknowledgment that preceding commissions were worthless and that the latest to be created was the most inutile, no matter how earnestly members of such commissions try to accomplish something definite. Is it not the part of wise statesmanship to use the United States Commission on Industrial Relations as the means for putting an end to all such commissions in the future and to let folks who desire such relaxations pay for them out of their own pockets? Some Congressman has a chance to give his name immortality in making that suggestion effective.

### RAILROAD EQUIPMENT PURCHASES.

AS compared with other years, purchases of equipment by the principal railroads are running light, but there is some encouragement in the fact that the Atchafalaya, Topeka & Santa Fe system is about to place a contract for 700 boxcars and expects shortly to send out inquiries for prices on additional equipment, the character of which cannot yet be announced. The Richmond, Fredericksburg & Potomac Railroad, which is the gateway to the South for the eastern trunk-line traffic, expects to add six steel passenger cars to its rolling stock within a few months, the contract to be placed soon. The Louisiana Railway & Navigation Co. has ordered three ten-wheel locomotives of seventy-five tons weight each, which will be delivered next autumn: the Atlanta, Birmingham & Atlantic Railroad recently received five locomotives for its freight serv-



ice, and the Nashville, Chattanooga & St. Louis Railway ordered sixteen engines.

Among the rail contracts lately reported are 1200 tons to be bought by the St. Louis Southwestern Railway, and 10,000 tons to be ordered by the Norfolk & Western Railway. The Chesapeake & Ohio Railway lately bought 6000 tons of rails, and the Florida East Coast Railway 500 tons. Both the Pennsylvania and the Baltimore & Ohio railroads are expected to make large purchases of rails this year. The latter has already ordered 25,000 tons.

One of the largest contracts lately noted was that of seventy-five locomotives ordered by the Illinois Central Railroad from two manufacturers, and the Pennsylvania is building several thousand cars at its own shops. The Baltimore & Ohio Railroad also bought 2000 cars and took options on space for 2000 more.

It is hoped that before long equipment and rail orders will increase, both in dimensions and numbers; it is early in the year, and the opening of spring may develop business so that the transportation lines will feel warranted in expending still more money for increases of facilities.

### SIGNAL FEAT IN RECLAMATION.

THE outcome of the drainage within three or four days of 30,000 acres of wet land in Orleans, Jefferson and Plaquemines parishes, Louisiana, which was begun last Saturday, will appeal to many interests. A plant embracing five great pumps was established to do the work, long the dream of George A. Hero, who has steadfastly maintained its practicality and its economic importance. The cost of the undertaking is estimated at \$234,000, or an average of about \$8 an acre. No one may safely estimate the increased value of the land when with light and air admitted the fertile alluvial soil shall yield up to its full capacity. The project is part of the general plan for the reclamation of about 10,000,000 acres of such land in Louisiana. Large areas in other parts of the State have thus been reclaimed, and data are abundant demonstrating the wonderful results. Nature has been so generous with its gifts to the South that folks have been slow to realize the advantage in making the most of the gifts. There has been waste or neglect in handling mineral, timber and land resources, simply because the resources are so extensive. But the greater day is dawning. The Southern mind is becoming more and more alert to the opportunities at hand. The signal feat in the Louisiana parishes right at the doors of New Orleans is a token of future achievement, not only for Louisiana, but for the South as a whole.

### POTASH.

NOW comes President Charles H. McDowell of the Armour Fertilizer Co. before the American Institute of Mining Engineers with the suggestion that the waste of the sugar-beet industry in this country could be made to yield enough potash to supply the entire present demand of manufacturers of chemicals. This is another hint for the benefit of Americans who had come to believe that imports of certain materials were absolutely essential to the growth of American industries. Six months of comparative abstinence from supplies of the kind from abroad have set projecting minds to diligent endeavor to discover or invent sources of supplies at home. The time may never come when the United States shall be independent in every respect of every other country. Perhaps it would not be the best thing in the world for such a status to be established. But any influence that may induce a full realization on our part of the vastness and variety of our natural resources and a proper handling of them cannot be without its blessing, whatever may be its drawbacks.

The Bureau of Economic Geology and Technology of the University of Texas has completed its laboratory for testing road materials, building stones, ballast, riprap, concrete, etc.

## Manifold Phases of Cement Industry

[Special Correspondence Manufacturers Record.]

Chicago, Ill., February 13.

That the business conditions of the country are fundamentally stable is being clearly demonstrated at the eighth Chicago Cement Show now being held in the Coliseum. More than fifty expectant exhibitors were unable to obtain space because of the lack of room, while the attendance of visitors exceeds in quality and number that of any other year in the history of these successful concrete exhibitions.

There are few, if any, industries which have seen as rapid a rise and development as that of concrete. This is due largely to the wide range of uses of this wonderful material, and to the fact that it can be made by local contractors and builders right at the place needed. Most of the materials entering into concrete are obtainable in the immediate vicinity, and as local labor is used almost exclusively, the money used in building with this material goes back to local industries.

Cement Show visitors are particularly interested in the photographs and transparencies depicting the fire at the Thomas A. Edison, Inc., plant last December. This disastrous fire was a complete demonstration of the efficiency of fireproof construction. Mr. Edison himself wrote the Chicago Cement Show management as follows:

"The report of our engineers shows that 87 per cent. of the reinforced concrete buildings, which were subjected to a very intense heat, are in good condition, and of the machinery which they contain, about 85 per cent. can be used, with small repairs. Buildings of other materials, together with contents, were entirely destroyed. We are using steel sash and wire glass in our repairs, and the concrete columns which shows cracks are being made stronger by using more reinforcement, with the addition of concrete put in place by cement guns. All permanent buildings which I will erect in the future will be built of concrete as the results of our fire as a triumph for this material."

Cement Show exhibitors consist of the leading manufacturers in the concrete industry. Their faith in the business outlook for 1915 is indicated by the fact that there were fifty more applicants for spaces than could be accommodated in the Chicago Coliseum. Building operations depend so vitally on the general business conditions of the country that this is regarded as a strong indication that the promised business boom has actually arrived. The Cement Show is a fair barometer not only of the concrete industry for the ensuing year, but of general business conditions as well.

Not only does the Cement Show indicate the faith of exhibitors in the business boom for 1915, but these concerns look forward to 1916 with even greater enthusiasm. For the first time in the history of the Chicago Cement Shows, the date for the next show was announced a year in advance. Together with Lincoln memorial exercises on Friday, February 12, was held the first drawing of spaces for the 1916 show. Results exceeded all expectations. As almost every space was taken at this drawing, it is possible that the management will consider taking the Armory in addition because of the unprecedented demand for space.

A large part of the present show is devoted to concrete road exhibits, pavers, machines and allied products. While the road shows this year have been devoted to a very large extent to machinery and appliances used in concrete road and street construction, yet the Cement Show is the central market place of all concrete machinery and appliances. The road is a specialized problem of concrete construction, but it is taking such a large share of attention at the present time and the methods of operation are undergoing such great change that for a time road machinery must hold the center of the stage at the Cement Show, irrespective of the other opportunities for road men to inspect and buy.

But the show is so big and all-embracing in its scope that the general building contractor also finds his field adequately covered. The small town contractor, whose work is largely residence and store foundations and sidewalks, is finding equal inspiration in the exhibits, for methods are developing as fast, perhaps, for handling this class of construction as for the bigger and more ambitious work. To contractors and engineers the Cement Show is opening a big field for study.

A tendency of modern times is to scrutinize more carefully all materials of construction and to subject

materials, once received on faith, to analysis which will insure the highest uniformity. This careful scrutiny is being very widely applied today to aggregates. It would seem farcical to apply careful tests to cement, only to mix it with sand and gravel of unknown constitution and doubtful quality. Each year has seen at the Cement Show an increasing number of devices for washing and screening sand and gravel, and the importance of this is being realized more and more each year.

Specifications are closing down so as to exclude materials from concrete work which were once standard. The study of these devices at the Show often indicates to producers and dealers in aggregates ways of obtaining an increased price for a higher grade material. Ten cents a yard expended in washing sand may increase its selling price out of all proportion to the added cost. Perhaps some education will be needed to place these higher grade materials on the market, but engineering and contracting journals are laying emphasis on this in a way which must be productive of big changes in the immediate future. It behooves material men to study the problem and anticipate the demands of the engineering profession.

Cement Show exhibitors and visitors were given this year an opportunity to become acquainted with the work of the Association of American Portland Cement Manufacturers, Percy H. Wilson, Philadelphia, secretary. At their booth a large number of interesting transparencies showing typical concrete work are proving of interest, as are the many publications pertaining to concrete which this organization distributes free of charge upon request. The association has been doing notable work tending toward the betterment of concrete construction, particularly last summer, when it furnished free of charge a large number of road inspectors on many of the concrete pavements under construction.

The eleventh annual convention of the American Concrete Institute was held from February 9 to 12, with President Richard L. Humphrey, Philadelphia, presiding. This organization was formerly known as the National Cement Users' Association. The excellent sets of specifications which this body has issued from time to time have given everyone a well-deserved respect for it. Discussions at this year's convention were devoted to concrete roads, sidewalks and bridges; concrete tests and design; concrete in art and architecture; plant management and costs. Special committees reported on eight widely different subjects covering practically all innovations in the concrete field. The convention was closed with a banquet and Lincoln memorial exercises on the evening of February 12, and commemorating as well the tenth year of the existence of the Institute. Retiring officers, Richard L. Humphrey, who has served ten years as president, and E. W. Krauss, who has served six years as secretary, were presented with bronze chime clocks as a slight token of the work they had performed for the Institute. The new officers are Leonard C. Wasson of Boston, president; Wm. K. Hatt of Lafayette and Henry C. Turner of New York city, vice-presidents; Robert W. Lesley of Philadelphia, treasurer. The new directors are William H. Ham, Boston; Ernest Ashton and A. E. Lindan, both of Chicago, and William P. Anderson. Douglas Malloch, the poet lumberman, acted as toastmaster at the banquet.

The exhibitors and the lines shown by them are:

Abram Cement Tool Manufacturing Co., Dugger Ind.; cement finishing tools.

Albrecht Excavator Co., Milwaukee, Wis.; road and excavating machines.

American Cement Machine Co., Inc., Keokuk, Iowa; concrete, mortar, plaster mixers.

American Contractor, Chicago; weekly publication devoted to building.

American Hoist & Derrick Co., St. Paul, Minn.; hoists, derricks, Crosby clips.

American Sawmill Machinery Co., Hackettstown, N. J.; sawmill and woodworking machinery.

Anchor Concrete Stone Co., Rock Rapids, Iowa; block machines, automatic tampers.

Archer Iron Works, Chicago; concrete mixers.

Architectural Mold Co., Detroit, Mich.; molds for concrete architectural specialties.

Arrowsmith Concrete Tool Co., Arrowsmith, Ill.; finishing tools, stamping outfits, curb and gutter forms.

Association of American Portland Cement Manufacturers, Philadelphia; National Service Bureau of Concrete Industry.

Atlas Engineering Co., Milwaukee, Wis.; concrete mixers.

Badger Concrete Mixer Co., Milwaukee, Wis.; concrete mixers.

Baker Company, R. D., Detroit, Mich.; equipment for concrete roads and pavements.

Baute Concrete Machinery Co., Benton Harbor, Mich.; block, brick and silo machines and tampers.

Better Roads and Streets, Jamestown, O.; a monthly publication devoted to road improvement.

Blaw Steel Construction Co., Pittsburgh, Pa.; steel forms for concrete construction, structural steel.

Blystone Manufacturing Co., Cambridge Springs, Pa.; concrete mixers, concrete block machines.

Building Age, New York; a monthly publication devoted to building.

Carnegie Steel Co., Pittsburgh, Pa.; steel shapes and bars, reinforcing bars, piling sections.

Carpenter & Co., George B., Chicago; contractors' tools, machinery and equipment.

Cement and Engineering News, Chicago; a monthly publication; books on cement and concrete.

Cement Era, The, Chicago; a monthly publication; books on cement and concrete.

Cement Tile Machinery Co., Waterloo, Iowa; concrete mixers, block and tile machines, power tampers.

Ceresit Waterproofing Co., Chicago; waterproofing for concrete.

Chain Belt Co., Milwaukee, Wis.; concrete mixers, paving mixers.

Chicago Builders' Specialties Co., Chicago; concrete mixers.

Chicago Portland Cement Co., Chicago; Portland cement.

C. H. & E. Manufacturing Co., Inc., Milwaukee, Wis.; portable saw rigs, contractors' equipment.

Concrete Age, The, Atlanta, Ga.; a monthly publication; books on concrete construction.

Concrete Cement Age, Detroit, Mich.; a monthly publication; books on concrete work.

Conneaut Shovel Co., Conneaut, O.; special shovels.

Contractor, The, Chicago; a semi-monthly publication devoted to contracting.

Contractors' Machinery Co., Keokuk, Iowa; concreting and contractors' equipment.

Cornelius Company, H. D., Indianapolis, Ind.; step, curb and gutter forms.

Corrugated Bar Co., Buffalo, N. Y.; reinforcing bars, mesh, lath, waterproofing.

Cropp & Co., A. J., Chicago; concrete mixers.

Crown Point Spar Co., New York; granite surfacings for concrete.

C-S Concrete Form Co., Kansas City, Mo.; adjustable steel column molds.

D. & A. Post Mold Co., Three Rivers, Mich.; concrete post machines and molds.

Dull Co., Raymond W., Chicago; sand and gravel washing equipment, excavators.

Dunn Manufacturing Co., W. E., Chicago; concrete machinery and crude-oil engines.

Elite Manufacturing Co., Ashland, O.; concrete mixers, scaffolding brackets, lifting jacks.

Engineering & Contracting, Chicago; a weekly magazine of civil engineering.

Engineering News, New York; a weekly publication devoted to building and engineering interests.

Engineering Record, New York; a building and Engineering weekly publication.

Eureka Machine Co., Lansing, Mich.; concrete and mortar mixers, pumping outfits.

Faberhill Manufacturing Co., Cleveland, O.; bag bundlers.

Foot Concrete Machinery Co., Chicago; concrete mixers, pavers, paving devices.

Garden City Sand Co., Chicago; Stonekote exteriors, Toch Bros.' waterproofing.

Gibson Concrete Works, Fromberg, Mont.; sectional reinforced concrete culverts.

Haiss Manufacturing Co., Inc., George, New York; wagon loaders, clamshell buckets, hoisting machinery.

Handy Sack Baler Co., Cedar Rapids, Iowa; machines for bundling empty cement and plaster sacks.

Heltzel Steel Form and Iron Works, Warren, O.; steel forms for all types of concrete work.

Hobbs Concrete Machinery Co., Detroit, Mich.; block machines and tampers.

Huron Portland Cement Co., Detroit, Mich.; Portland cement.

Hurst Company, Chas. B., Chicago; poured reinforced concrete block silos.

Hydraulic Pressed Steel Co., Cleveland, O.; wood and metal forms for subways, sewers, retaining walls buildings and silos.

Ideal Concrete Machinery Co., Cincinnati, O.; concrete mixers, block and brick machines, power tampers.

Illinois Steel Co., Chicago; reinforcement bars, round, square and twisted.

Indianapolis Cable Excavator Co., Indianapolis, Ind.; cableway excavators.

Interlocking Cement Stave Silo Co., Des Moines, Iowa; machines for manufacturing interlocking cement staves for silos and water tanks.

International Motor Co., Chicago; Mack and Saurer motor trucks.

International Roofing Manufacturing Co., Chicago; manufacturers of asphalt shingles, roofings and paints.

Jaeger Machine Co., Columbus, O.; concrete mixers.

Kent Machine Co., Kent, O.; concrete mixers and mortar mixers.

Keystone Silo Co., Sheffield, Iowa; Keystone silos machines for Keystone silo blocks.

Knickerbocker Company, Jackson, Mich.; concrete and mortar mixers.

Koehring Machine Co., Milwaukee, Wis.; concrete mixers, pavers, bar cutters and benders.

La Grange Specialty Co., La Grange, Ind.; brick, post and tile machines.

Lakewood Engineering Co., Cleveland, O.; contractors' equipment, industrial cars.

Lansing Company, Lansing, Mich.; concrete, mortar and plaster mixers, wheelbarrows and carts.

Lehigh Portland Cement Co., Allentown, Pa.; Portland cement.

Louden Machinery Co., Fairfield, Iowa; barn and stable equipment.

MacArthur Cement Products Co., Burlington, Iowa; molds and processes for poured concrete blocks.

Marble Mosaic Co., Milwaukee, Wis.; marble, mosaic floors, wainscot, stair treads, toilet slabs.

Marsh-Capron Manufacturing Co., Chicago; concrete mixers, contractors, specialties.

Michigan Portland Cement Co., Chelsea, Mich.; Portland cement.

Miles Manufacturing Co., Inc., Jackson, Mich.; concrete mixers, block machines.

Milwaukee Concrete Mixer Co., Milwaukee, Wis.; concrete mixers, paving mixers.

Monolithic Silo & Construction Co., Chicago; equipment for building monolithic concrete silos.

Mortar Mixer Corporation, Iowa City, Iowa; mortar and plaster mixers.

Multiplex Concrete Machinery Co., Elmore, O.; block machines, cap, step, sill, column and ornamental molds.

Municipal Engineering & Contracting Co., Chicago; concrete mixers, paving mixers.

National Lead Co., New York; paints for concrete, expansion bolts.

National Mixer Co., Oshkosh, Wis.; concrete mixers.

Newaygo Portland Cement Co., Grand Rapids, Mich.; Portland cement.

New Aetna Portland Cement Co., Detroit, Mich.; Portland cement.

New Enterprise Concrete Machinery Co., Chicago; molds and equipment for concrete silos, wall forms.

New-Way Motor Co., Lansing, Mich.; air-cooled engines.

Northfield Iron Co., Northfield, Minn.; concrete mixers.

Northwestern Manufacturing Co., Sioux City, Iowa; cement block and brick machines, power tampers.

Northwestern Steel and Iron Works, Eau Claire, Wis.; concrete mixers.

Norwalk Mold Co., Norwalk, O.; concrete grave vaults and molds.

Norwalk Vault Co., Norwalk, O.; grave vault molds, reinforced concrete grave vaults.

Novo Engine Co., Lansing, Mich.; gasoline engines, hoisting outfits, diaphragm, trench, suction and force pumps.

Ohio Post Mold Co., Toledo, O.; molds for concrete fenceposts.

Olsen Concrete Mixer Co., Elkhorn, Wis.; concrete mixers.

Original Gas Engine Co., Lansing, Mich.; gasoline engines, hoists, pumps.

Orr & Sembower, Inc., Reading, Pa.; engines, boilers, hoisting engines.

Oshkosh Manufacturing Co., Oshkosh, Wis.; concrete mixers, pavers, saw rigs.

Patent Vulcanite Roofing Co., Chicago; roofing materials, asphalt shingles, ornamental roofings.

Peerless Portland Cement Co., Union City, Mich.; Portland cement.

Peninsular Portland Cement Co., Jackson, Mich.; Portland cement.

Pioneer Manufacturing Co., Waterloo, Iowa; Bell-End concrete pipe machines.

Polk-Genung-Polk Company, Inc., Fort Branch, Ind.; forms for reinforced concrete grain tanks, silos, stacks and standpipes.

Power & Mining Machinery Co., Cudahy, Wis.; concrete mixers, mining, crushing and cement machinery.

Raber & Lang Manufacturing Co., Kendallville, Ind.; concrete mixers, tampers, brick, sewer pipe and drain tile molds.

Radford Publications, Chicago; monthly publication devoted to building; books, encyclopedias and plans.

Ransome Concrete Machinery Co., Dunellen, N. J.; concrete mixers, paving mixers.

Reichert Manufacturing Co., Milwaukee, Wis.; metal molds for concrete construction.

Republic Iron Works, Lansing, Mich.; concrete mixers, contractors' equipment.

Road Maker, The, Des Moines, Iowa; a monthly publication devoted to highways.

Rock Products & Building Materials, Chicago; a semi-monthly publication devoted to rock products.

Roughen Adjustable Paving Gauge Co., Fon du Lac, Wis.; adjustable paving gauges and bridges.

Salisbury & Co., W. H., Chicago; rubber and leather belting, hose, packing.

Sandusky Portland Cement Co., Sandusky, O.; Portland cement.

Sasgen Derrick Co., Chicago; derricks, winches, timber and stone tongs.

Sauerman Bros., Chicago; cableway excavators, power scrapers, wire rope and fittings.

Schaefer Manufacturing Co., Berlin, Wis.; concrete mixers, gasoline engines, saw rigs.

Schlueter, M. L., Chicago; machines for surfacing floors of all kinds.

Sioux City Engine & Machinery Co., Sioux City, Iowa; mixers, engines, block, brick and tile machines.

Smith Company, T. L., Milwaukee, Wis.; concrete mixers, paving mixers.

Smooth-On Manufacturing Co., Jersey City, N. J.; waterproofings and hardeners for concrete.

Standard Scale & Supply Co., Chicago; concrete mixers, gas engines, hoists, pumps, contractors' equipment.

Staple Post Mold Co., Westerville, O.; fencepost molds and machines.

Steam Shovel & Dredge Journal, Chicago; a monthly publication devoted to excavating and dredging.

Thomas Elevator Co., Chicago; hoists for excavating and building construction.

Trussed Concrete Steel Co., Detroit, Mich.; reinforcing steel, metal lath, expansion joint plates, steel sash and waterproofing.

United Wire Tie Co., Toledo, O.; wire ties, wire-twisting tools.

Universal Concrete Bar Co., Chicago; expansion joints and curb protection bars.

Universal Crusher Co., Cedar Rapids, Iowa; rock crushers, screens and elevators, good roads outfits.

Universal Form Clamp Co., Inc., Chicago; clamps for use with wooden forms.

Universal Portland Cement Co., Chicago; Portland cement.

U. S. Standard Manufacturing Co., Ashland, O.; concrete mixers, block machines, slate dressers.

Van Duzen-Roys Company, Columbus, O.; concrete mixers.

Wabash Portland Cement Co., Detroit, Mich.; Portland cement.

Wagner-Behm Company, Chicago; Pull-Easy nail collars for temporary forms.

Waterloo Cement Machinery Corporation, Waterloo, Iowa; concrete mixers.

Weller Manufacturing Co., Chicago; equipment for handling bulk cement, material storage bins.

Wheeling Mold & Foundry Co., Wheeling, W. Va.; stationary and portable crushing outfits.



Whitman Agricultural Co., St. Louis, Mo.; diaphragm and centrifugal pumping outfits, engines, hoists, saw rigs.

Wolverine Portland Cement Co., Coldwater, Mich.; Portland cement.

Wright Bros., Litchfield, Ill.; machines for baling empty cement and plaster sacks.

Wyandotte Portland Cement Co., Wyandotte, Mich.; Portland cement.

## NATIONAL BRICK MANUFACTURERS.

### Features of the Annual Convention of the Association This Week at Detroit.

At the annual convention this week at Detroit of the National Brick Manufacturers' Association of the United States of America the program includes, in addition to the annual address of President Eben Rodgers of Alton, Mich., and the report by Treasurer John W. Sibley of Birmingham, Ala., papers as follows:

"Progress in the Education of Clayworkers" (illustrated), Prof. Edward Orton, dean College of Engineering, Ohio State University, Columbus, O.

"Fire Prevention," Floyd E. Waite, Society Advancing Fire Elimination, Cleveland, O.

"The Other Fellow in the Brick Business," Thomas E. Wilson, Pittsburgh Clay Products Co., Pittsburgh, Pa.

"The Up-to-Date Method of Boosting the Brick Game," Robert C. Mitchell, sales manager the Farr Brick Co., Cleveland, O.; discussion led by S. B. Dobbs, Philadelphia, Pa.

"Meeting Competition," F. W. Fitzpatrick, consulting architect, Washington, D. C.; discussion led by Fritz Salmen, New Orleans, La.

"Modern Brick Architecture" (illustrated), Robert Spencer, Jr., architect, Chicago, Ill.; discussion led by Herman L. Matz, president Panama-Pacific Clay Products Association, Chicago, Ill.

"Unsolved Problems in Clayworking," R. T. Stull, director ceramic department, Illinois State University, Urbana, Ill.

"Kiln Expansion and Bracing" (illustrated), Carl B. Harrop, assistant professor department of ceramic engineering, Ohio State University, Columbus, O.

"The Testing of Large Brick Piers" (illustrated), J. H. Griffiths, Bureau of Standards, Pittsburgh, Pa.

"The Modern Idea of Encouraging the Larger Use of Building Brick," Wm. J. Bowen, president International Brick Co., El Paso, Tex.

"Simplified Brickyard Accounting," A. Pritchard, president the Adams Clay Products Co., Indianapolis, Indiana.

"Modern Methods of Controlling Kiln Temperatures," J. W. Robb, manager Clinton Paving Brick Co., Clinton, Ind.

"Producer Gas, Some of Its Advantages as Applied to Brick Plant Processes," James P. Williams, clayworking engineer, St. Louis, Mo.

"Some Things Southern Brick Manufacturers Desire," J. M. Jenkins, Montgomery, Ala.

In addition to the foregoing addresses and papers, various papers pertaining to brickyard practice will be discussed.

The officers of the association are: President, Eben Rodgers, Alton, Ill.; first vice-president, C. P. Mayer, Bridgeville, Pa.; second vice-president, Charles J. Deckman, Cleveland, O.; third vice-president, Fritz Salmen, Slidell, La.; treasurer, John W. Sibley, Birmingham, Ala.; secretary, Theo. A. Randall, Indianapolis, Ind.; assistant secretary, A. M. Wallace, Indianapolis, Ind. State vice-presidents—J. M. Jenkins, Montgomery, Ala.; Chas. A. Miller, Toronto, Ont., Canada; J. F. Reynolds, North Haven, Conn.; L. Perry West, Washington, D. C.; George O. Berry, Columbus, Ga.; J. W. Stipes, Champaign, Ill.; Fred Adams, Indianapolis, Ind.; Paul Beer, South Des Moines, Iowa; W. G. Buckles, Coffeyville, Kans.; E. R. Dillehay, Danville, Ky.; F. Salmen, Slidell, La.; Warren Griffiths, Baltimore, Md.; E. L. Cook, State Farm, Mass.; George H. Clippert, Detroit, Mich.; F. J. Nixon, Duluth, Minn.; Robert Nesch, Kansas City, Mo.; J. Fred Smith, Omaha, Neb.; Prof. C. W. Parmelee, New Brunswick, N. J.; Prof. Charles F. Binns, Alfred, N. Y.; A. R. D. Johnson, Raleigh, N. C.; Orville N. Townsend, Zanesville, O.; W. M. Hodges, Bradford, Pa.; T. L. Herbert, Nashville, Tenn.; Thomas M. Harwood, Gonzales, Tex.; J. W. Davis, Newport News, Va.; George J. Schwarz, Milwaukee, Wis.

## Public Questions from Different Angles

**I**f every reader of the MANUFACTURERS RECORD agreed with every position taken by us on every subject, we should have good reason to suspect that we were lacking in force. If no reader ever combated any position of ours, we should know that we were dead. It is our right to express our views according to our judgment. It is the right of others to express their views under similar impulse. If it happens that others are among our readers and that the expression of their views turns upon disagreement with the expression of our views, a point of view shared equally by both parties may, perhaps, be gained. At any rate, the other fellow has his say. This in explanation of the publication of the following communications inspired by recent editorials in the MANUFACTURERS RECORD which seem not to have met with entire approval on the part of some of our readers and to have been diametrically opposite to the judgment of others.

### ADVANTAGES OF GOVERNMENT REGULATION. LAMB-FISH LUMBER CO.,

Charleston, Miss.

Editor Manufacturers Record:

Our mill at Charleston, Miss., closed down on September 25. This action was made necessary by the European war. For the past five or six years we have given close attention to foreign demands, and had been successful in establishing an excellent trade abroad. When this source of distribution was destroyed in August we were deprived of an outlet for about 40 per cent. of our production. We continued operation of the mill, though, just as long as it was possible to do so, feeling that it would have a good effect locally, and if other larger operations would do likewise confidence would be restored and the country as a whole would suffer only a temporary depression. However, there is a limit to all things. We kept the mill going until September 25 and then closed down, as there was no other course open to us. The mill remained idle until January 11, reopening at that time. While this mill is the largest hardwood mill in the world, it is a minor investment of our directors. They all have interests of varied kinds in the Central and Western States, and in view of improved business conditions and better outlook for domestic trade, they authorized starting up the mill, although conditions in the lumber trade at the time did not warrant it. We are, however, facing another problem now which, if made effective, will prove more disastrous to this investment, representing \$5,000,000, than the war in Europe, and that is, advance in freight rates, ranging from 18 to 40 per cent.

In this connection I desire to take issue with you concerning your editorial of January 21, under caption "Deadening Effect of Government Regulation." To start with, I desire to define the words MANUFACTURERS RECORD, as the two words appeal to my mental faculties. With me, they are synonymous with prosperity for the capitalist and the masses; progressive development of latent possibilities and upbuilding of the nation commercially. No one could study your editorials and fail to observe the fairness displayed concerning differences between capital and labor, or overlook the effort you have put forth to stimulate individual activities, market waste products, create a wider field for distribution of products of the soil, forest, mine or manufacturer; nor can anyone rightfully say that the commerce of this country has not materially benefited by your endeavors. This is the interpretation my mind places on the MANUFACTURERS RECORD, your editorial policy and yourself. Therefore, it has been difficult for me to understand what prompted the editorial referred to. Possibly your investigations relating to transportation have not been as exhaustive as along other lines. Or it may be you have had some experience that justifies you in believing the Interstate Commerce Commission has produced an effect contrary to the object for which it was intended, but I can comprehend no reason why anyone could condemn reforms brought about by that body. Were it not for the fact that this article emanated from a source of long-recognized standing, and you have used your influence for general betterment, it would not be necessary to ask that you look at the other side of the question, in event you have not already done so. Your opinions are taken as accepted facts by many readers of the MANUFACTURERS RECORD; they are frequently quoted, and you can well be proud of the weight they carry. Therefore, it is obvious your purpose is to advocate measures helpful to general welfare of the country, and where your views conflict with such object you will give consideration to ideas of others and facts which may not have been brought to your notice, changing your thoughts to conform with the best inter-

ests of commerce and the essential things that enter into its expansion. With these ideas in view, I feel that it will not be amiss, in answering your letter of the 19th, to direct attention to other conditions affecting the lumber industry more so than the European war, and which conditions you impliedly support in the article in question.

The Constitution of the United States gives to Congress full power to regulate commerce with foreign nations, among the States and Indian tribes. (Section 8, clause 3, Article I.) The act to regulate commerce, creating the Interstate Commerce Commission, was approved February 4, 1887, to take effect April 5, 1887. For a long period provisions of the act were inoperative, and it was not until the early part of this century, after passage of the Hepburn bill and Elkins act, that any attempt was made to enforce Federal regulations governing interstate transportation. Prior to the time these regulations became effective, the success or failure of an industry, where there was only a reasonable margin of profit, depended upon whims of traffic officials. In those days rates were established and withdrawn in an hour's time; rebates were given with a lavish hand to the favored few controlling heavy tonnage; no attempt was made to foster local industries; competition among the carriers was keen, and the only factor considered in solicitation was extent of the rebate. As a consequence, there could be no equitable distribution of the country's products. Control was vested with the larger operators, and these operators, having tonnage to sell, increased their demands to the superlative degree. Profits of the roads, even those wisely built and properly managed, decreased to an alarming proportion. Receiverships for railroads were common announcements, and such securities possessed no stability. This was the situation when there was no regulation. The Elkins act and Hepburn bill had the needed effect. Shippers and carriers realized alike that freight rates must be maintained. Prestige of the large shipper passed, in a way. The swaddling industry was placed on a more equal basis with the larger and better favored competitor. There was no special privilege of a monetary nature that could be lawfully sanctioned. A long step was taken toward making business honest, in so far as it related to transportation. Those previously receiving rebates had become careless. With this source of income cut off, they were compelled to watch producing and marketing costs more closely. The result has proven so satisfactory that I seriously doubt if any business man would care to go back to the old order of things. Federal regulation of freight rates has been responsible for the improvement. There have been few indictments for violations of the act. No doubt rebates have been given, either directly or indirectly, even in recent years, and the chances are such practices will continue. The business public as a rule understand the law relating to transportation. There is now no sympathy for the one that receives or gives a rebate and is convicted of the offense. Such person is now considered on the same relative plane as a transgressor of other laws with which the people are better acquainted. In other words, to give or receive a rebate is a crime. The criminal is not wanted or needed in placing commerce on a better footing. The commission has merely been an instrumentality. The act and its many amendments has been the power, and through the commission remedial prescriptions have developed the better side of men in power.

When the rebate ceased to be a factor in solicitation it became necessary for the carriers to find other means of developing tonnage and meriting patronage. Industrial departments were created, and these departments have proven of immense help to the territory traversed

by their rails. In every issue of the **MANUFACTURERS RECORD** advertisements are carried of vacant warehouses, factories or stores and business opportunities. Experiment farms are being conducted; experienced men are sent out to help communities to become acquainted with a new line of trade. Assistance is given in the marketing of products, and the railroads endeavor to co-operate with their patrons in many ways. The railroads now get what their tariffs call for, and their securities are now on a higher level than industrials. They have benefited more by regulation and without the power of rate-making than when control was in their own hands. It is true they have suffered some by the European war, and I doubt the wisdom of the commission in granting the 5 per cent. advance in Central and Eastern territory. However, they had all facts before them. Their integrity has never been justly questioned, and I am confident they did what they thought was best. Southern farmers have already lost more on their cotton than the railroads will lose for possibly 10 years. Lumber, too, has shrunk in value. On top of all of the calamities that have struck the South during the past six months, Southern lines have proposed increases in rates on many commodities. Lumber advances ranging from 5 to 50 per cent. were proposed in tariffs under suspension. From our mill they were made from 18 to 40 per cent. Were it not for the commission to pass upon reasonableness of the proposed rates, or some provision in the law for shippers' protection, commerce of the country would be under absolute control of a few railroad officials, assuming the day of the rebate has gone. Part of your editorial would be correct if it related to carriers regulating timber investments, if changed to read railroad officials instead of public officials. That part I have in mind is quoted below, with the change referred to.

"It is impossible to induce men to invest largely in constructive operations if the control of the money or of the property is taken entirely from them, and if they are to be merely clerks to do the will of railroad officials, who have provided neither the capital nor the brains needed in such undertakings. We may rail all we care to do against the unwillingness of capitalists to invest their money in such undertakings, but that will be of no avail."

If these proposed rate advances had not been under Government control and subject to suspension, this mill would not have opened on January 11, and the chances are that a large proportion of the 500 men now at work would be idle.

I would also like to call your attention to the poem of Walt Mason, entitled "Public Enemies." I can recall only a few real builders that have received results commensurate with their labors. I know of several that blazed the way, only to lose control after their plans had been consummated. Men like J. Skelton Williams, Arthur Stilwell and H. M. Atkinson were builders. While not now in control of properties they created, I feel safe in saying the shipping public, acquainted with their activities, would make material sacrifices upon the recommendation of these men. The builder suffers little from the public. "Public Enemies" more often are his associates.

While we may differ with the commission regarding many of their decisions, yet we must realize their findings are based upon facts as disclosed by the record. Where it has been shown their rulings have been unwise they have reversed themselves. The good they have accomplished overbalances any mistake they may have made.

The new Trade Commission has an unlimited field. There are many reforms that should be brought about not now provided for in the civil codes. In many cases where one firm takes an unfair advantage of another there may be recourse through the courts, but the amount involved may not justify the injured party to seek relief, or he may find it expedient to accept a compromise rather than participate in long drawn out litigation. An administrative body with a seal to which judicial notice would be given could rectify many evils that now seriously retard the country's commercial growth. Improvements that could be made are too numerous to mention. In brief, there should be freer intercourse of trade relations between the States, and a shipper should feel as safe in forwarding his goods across the continent as to a market 10 miles distant. My idea is the new commission would have as their object the bringing about of this condition. This is the same result that you are seeking, and it would appear

as if you are a little inconsistent in condemning them before they have had a chance.

If the present freight rates remain in effect our mill will probably continue without interruption for some time to come. In the hearings that have recently taken place we have shown the carriers where it would be impossible to operate where higher transportation charges were demanded. Half of our output is of an introductory nature. We have been trying to make a demand for gum lumber. The market will not take it at a price that will pay for its production. This we have proven. We have laid our side of the case before the railroads as well as the commission. If a decision is handed down in our favor within the next month or so we will likely keep going. Otherwise, we will possibly close down late April or early May, although our opinion is that the year 1915 will be one of general prosperity.

GEO. LAMB, Traffic Manager.

#### HE THINKS FOR HIMSELF.

Teague, Tex.

*Editor Manufacturers Record:*

I notice with interest "Choose Ye, Poverty or Prosperity," and a great many similar writings. I am no socialist, but just a plain workman that dares to think a little and say what I think. When you parade your sympathy for the farmers you make me laugh.

Now I want to tell you that the Underwood free-trade bill is all right. You know, and you know the people who think know, it is not the tariff legislation that is hurting the country today, and that the money kings who have reaped fortunes off the poor unsuspecting public are hoarding their millions trying to induce legislation in their favor, if not trying to coerce their political henchmen, as you call them, into such measures as would benefit the manufacturers as against the general public.

In one of your recent papers you talk about the country going to ruin because the warring nations have stopped the loaning of money to this country. I say, you look up the records and see what a vast amount of interest this country is paying for the incubated good times, as you are wont to call the times back, when the manufacturers of this country made millions because of the high tariff and at the expense and hurt of the consumer, when foreign investments amount to \$7,500,000,000 and drew from this country \$350,000,000 in interest, and at the same time making multimillionaires and pauperism. \* \* \* I take the present situation as a blessing in disguise. It will cause (I hope) the people to take notice, and save what little they make, that they may be prepared for any further attempt by the money sharks to precipitate hard times on the American people. As Lincoln once said, "You can't fool all the people all the time," and I think that time has come. No, my dear sir, I am a regular subscriber to your paper, and like it very well, as I can see, by reading its pages, just where the storm is raging. Keep on in the good work, as you are sure in harmony with the general crowd that are reaping millions off the labor of the masses. I will close by saying I am an employer of a number of men, and have given the situation some thought, if I am capable of thinking, as you may question.

C. E. FAIRES.

#### WANTS A TARIFF COMMISSION.

JOHN L. ROPER LUMBER CO.,

Newbern, N. C.

*Editor Manufacturers Record:*

I am firmly of the belief that the changes in the tariff caused great loss to this country, and has a great deal to do with the falling off of business up to the time of the war in Europe, and since then everything has "gone to the dogs," particularly in our line. I do not know that ever the lumber business has been as bad as it has been for the last six months.

I believe that one of the best things that the Democratic party could do would be to establish a tariff commission, along the same lines as the Interstate Commerce Commission, with power to raise or lower tariff on any items that they may see fit. Without wishing in any way to disparage the ability of the gentlemen who sit in the Senate and House at Washington, I do not think that they have the necessary knowledge to accurately determine what tariff should be placed on the different manufactured goods or the raw material. For instance, the Senator from the sugar district in Louisiana may know sugar, but what does he know about hides or

chemicals, and yet he is asked to pass judgment upon something he knows nothing about.

Just think what kind of rates we would have in the United States if the House and Senate had to make the rate tariffs. Certainly railroad rates are as easy to make as the tariff on imports, at least such is my opinion.

I am very glad to notice a tendency at Washington to let so-called "big business" alone for awhile. The last two or three years have been strenuous ones, and no one has known just where he stood. I think that President Wilson's speech before the National Chamber of Commerce last week was one of the most wonderful changes that ever happened. A couple of years ago he was denouncing business men as "lobbyists" if they came to Washington to strive for or against different bills; now he wants their advice.

It begins to look like the outcome of the last election called for some change in the policy. Let us hope so—we certainly needed it.

A. T. GERRANS.

#### AN ODD VIEW OF BANKERS AND OTHERS.

Fargo, N. D.

*Editor Manufacturers Record:*

Copy of your publication received. I can see when a publication of this kind is of great value as a reference book in the matter of manufacture and constructive work of all kinds, but your letters from bankers and business men on finance are not worthy of publication in a magazine of this kind. The views of a banker are as a general thing very narrow, and the prosperity of the banker depends largely on the non-prosperity of the small business men and consumer. Your editorials on tariff and the cause of business depression are misleading, and not worthy of consideration, especially the one entitled "Killing Louisiana Sugar Industry." I do not think you or anyone else will blindfold the people with such one-sided, corporation-saturated, worn-out argument much longer. For these reasons I do not wish to subscribe for the **MANUFACTURERS RECORD**.

P. BIELLAND.

#### Goldsboro Wants a Cannery.

Chamber of Commerce,

Goldsboro, N. C., February 12.

*Editor Manufacturers Record:*

We are interested in establishing a canning industry. This city is the center of a vast fruit and trucking section, which affords an unlimited supply of raw materials for an enterprise of this nature. The local demand would consume the supply of one factory, in addition to the home markets, the markets of the large Eastern cities can be reached with ease, as we are 150 miles from Norfolk, Va., and Richmond, Va.; 250 miles to Washington, 300 miles to Baltimore and 375 miles to Philadelphia.

Any assistance you can render in placing us in touch with parties interested will be appreciated.

M. R. BEAMAN, Commercial Secretary.

#### Two Blocks for a Galveston Warehouse.

K. Fukushima, president of the Southern Products Co., Dallas, Tex., informs the **MANUFACTURERS RECORD** that his company has secured two blocks of land in Galveston, upon which it proposes to erect a warehouse for the concentration of cotton. The Southern Products Co. has as agencies Mitsui Bussan Kaisha at Tokio and other Japanese cities, Hongkong, Shanghai, Bombay and Calcutta, and Mitsui & Co., New York, San Francisco, London and Hamburg. It is understood that the establishment of the warehouse at Galveston will mean that cotton that has previously been exported by way of San Francisco will go to the East through Galveston and by way of the Panama Canal.

It is announced that direct shipments of raw sugar from Havana to Philadelphia and New York by way of the car barge service of the Flagler system to Key West and the Florida East Coast Railway to Jacksonville and the Clyde Steamship Line for the rest of the journey will begin in a few days.



# A Plantation of Diversified Crops

By CAPT. J. F. MERRY of Manchester, Iowa.

In one of our Southern progressive newspapers appeared recently the following head lines: "Diversify Your Crops." "Quit Growing All Cotton." "Raise Something to Live On." This was followed by a strong argument in favor of diversified farming. For several years the writer devoted much of his time to writing and mailing pamphlets and circulars and to making public addresses in favor of a cultivation of every variety of crop that could be successfully grown on Southern farms. The article above referred to was, therefore, read with unusual interest. Our plea was that a country with a soil, water supply and climatic conditions perfectly adapted to the growing of staple food products should not confine its farm operations to any one single crop. At times we were well-nigh discouraged in our attempts to persuade the cotton planters of Mississippi and Louisiana that better net results could be obtained by raising their own corn, oats and meat. Steadily, however, the thought of farm diversification has found a permanent lodgment in the minds of Southern planters, until today it has become a common practice. Several Southern publications find their way to the writer's desk every week, and scarcely an issue in which is not found reports of important changes going on among the farmers of the South, some in counties where the cattle tick has been eradicated are engaging in the breeding and feeding of cattle for beef. In other localities dairies and even creameries have been established, and upon nearly every Southern farm corn, oats, potatoes, peas, lespedeza and a great variety of other crops are grown. These are the most encouraging conditions that will mean much to the farmers of the South.

The writer, while spending Thanksgiving with friends at Vicksburg, Miss., met an old comrade by the name of Maxwell, who soon after the war left his native Hoosier State and located on a large plantation in Northern Louisiana only a few miles west of Vicksburg. At that time it was quite the thing to grow cotton to the exclusion of nearly every other crop, and Comrade Maxwell easily fell into the mode of farming, and with the customary results. Some years his farm operations were fairly satisfactory, but such was not always the case. A few years since the Mexican boll-weevil put in an appearance, and in spite of every effort of the agricultural department and of the planters themselves, the weevil got more than his share of the crop, to the disgust and discouragement of the planter. It soon developed, however, that the weevil was only a cotton pest, and my friend Maxwell and other planters soon turned their attention to the growing of crops for which the weevil had no affinity.

At our meeting at Vicksburg we questioned Mr. Maxwell as to his crop operations, and were dazed at the statement we understood him to make, that he had 1800 acres in winter oats. After our return to Iowa, where every farmer grows from 20 to 60 acres of oats, we thought of Mr. Maxwell's report, and it seemed to us incredible that any Southern planter should have an 1800-acre oat field. Our hearing is not so good as it once was, and we must have misunderstood him, and lest we should misquote him, on December 1 I wrote Mr. Maxwell a letter, requesting that he write me in detail as to the variety of crops and the acreage of each crop for this season. On the 19th of December I received his reply, which is as follows:

"I have planted in fall oats, 1800 acres; alfalfa, 50 acres; red crimson clover, 100 acres; lespedeza, 710 acres.

"I will plant in February in lespedeza 300 acres; January and February, in Irish potatoes, 300 acres; cotton, 1500 acres; Bermuda, 60 acres; corn, 3790 acres.

"Total acreage, 8500 acres."

To this he added:

"We may cut the cotton acreage and plant more corn. Our oats the past two seasons have averaged from 35 to 84 bushels per acre, weighing as high as 44 pounds to the bushel, and after the oats we make a crop of corn and peas."

My only object in furnishing the readers of the MANUFACTURERS RECORD this marvelous showing is that they may become acquainted with the transition that is taking place among the farmers, especially of the cotton States. We would not be understood, however, as even intimating that these planters are now abandoning or

will in the future abandon cotton-growing. We do not believe this is wise or that it will be done. The South will continue to grow cotton, but when its planters grow only such an amount as they can handle; when, like Comrade Maxwell, they grow more oats and corn and potatoes and other food products than they can possibly use upon the plantation, and when the cotton is baled they can use their own judgment as to when it shall be sold, then, and not until then, will our cotton planters become independent. It is most encouraging to note the splendid herds of cattle in Mississippi, some of which carried off a number of blue ribbon prizes at the great Iowa State Fair. We also note with pleasure the efforts being made by the Central of Georgia Railroad Co. to induce the farmers adjacent thereto to diversify their crops and engage in the production of such varieties as will net them most money. It is also encouraging to find nearly every local newspaper throughout the South is urging diversification. Few farmers can operate on a scale as extensive as that of Mr. Maxwell, but all can grow a variety of crops. No one can make an intelligent prophecy as to when the unfortunate European conflict will cease, and no patriot would have the United States profit by such a war. But no matter how we may feel, of this there can be no question: The shiploads of provisions which the people of America are sending to stricken Europe advertise the United States as a great food-producing country, and when peace is declared we may expect industrious, home-loving, hard-working but moneyless families will somehow find their way to our shores, and the South, with its millions of acres of uncultivated lands, every 10 acres of which, intensely farmed, will support an average family, will certainly get her share of such immigration as is desirable. In the meantime, let the farmers of the South, whether they cultivate few or many acres, demonstrate to the world that Southern soil can and does produce everything necessary for the physical comfort of man or beast.

## For Full Utilization of Southern Farm Potentials.

Editor Manufacturers Record:

I have been acquainted with your work for a good many years, and I know of your good services to the South.

As I am writing matter concerning the growth and development of the South, I am quite well posted on conditions at present. I know of the good work being done by the railroads in advertising the South's advantages, but where they are getting their thousands, the railroads of the North, like David, are getting their ten thousands.

Sumter, S. C., has initiated a plan that looks like the true solution of the matter. You are acquainted with it, and know that they offer 40 acres, stock sufficient to run it, tools, buildings and a year's supply of food to any worthy young married couple who are strong, healthful, know how to work and are willing to do so, and who love farm life and are acquainted with practical and theoretical agriculture. They furnish all that is needed and let the couple have ample time to pay for all, and at the lowest rate of interest. They make it almost impossible for them to fail. Why? Sumter needs just such people. She will have more to ship, a better trade and greater development.

The Canadian Pacific Railroad has many of its agents in the United States making exactly the same offers. They are getting the people of our country by thousands. There is much land there for homesteading, but alternate strips of land along the road is the road's and must be sold by it, and it can find no better way than the one mentioned to sell the land, and at the same time secure some of the best patrons for their lines in the world.

The Southern, Coast Line, Chesapeake & Ohio, Nashville, Chattanooga & St. Louis, Louisville & Nashville, Illinois Central, Cotton Belt, Santa Fe, Rock Island and the rest are doing excellent work as advertisers, but is that all they should do? The South is the "Nation's Greatest Asset;" it has the land, the minerals, the timber, the water supply, the harbors; in fact, everything for empire building except "Jim Hill." It has

50,000,000 acres of land that can be cut into 1,250,000 farms of 40 acres each, fully equipped with stock, buildings, tools, food for a year, at \$1500 each. Following the Sumter plan and selecting the right kind of people would make a great change in the production of the South.

Truck, fruits, sheep, poultry, eggs, cereals, cattle, butter, hogs are needed more and more. The South can supply them, but she is wedded to cotton, tobacco, rice, sugar. She can raise as much of these as she does now and still have room for all the others. Intensified farming, better farming, is what she needs. The large estates are fine to have, but they do not add nearly so much to the wealth of the State as the small farms. The Elmdorf Farm at Lexington, Ky., with its 14,000 acres, does not add so much to the business of Lexington as would the same estate were it cut up into 350 farms of 40 acres each and cultivated to the highest extent. Biltmore estate could be divided into more than 5000 such farms.

No one would wish to divide them, but the South needs more farms. Georgia paid out several million dollars more for her food supply last year than her entire crop came to, and she could have raised every pound, bushel or basket at home.

The value of the West North Central section in farm values in 1910 was \$13,535,309,511. The South's was \$8,972,126,889, or \$4,563,181,622 in favor of the one section of the North.

The South has all of the best of the situation from the standpoint of natural advantages, and should lead.

What can you do to arouse the railroads and the cities? The railroads can work alone or with the cities and make both rich.

There will be thousands of towns and cities growing up around the mines, water-power sites, timber belts and good harbors. Their people must be fed, and they, in turn, must furnish the farmers.

Moses E. Wood,

Head Department of Psychology and Pedagogy, Central State Normal School, Edmond, Okla.

## Reports of Optimistic Moves.

Manufacturing companies at Dunn, N. C., are preparing to start on full time about March 1.

Chester (W. Va.) plant of the American Sheet & Tin Plate Co. resumes operations, giving nearly 500 men employment.

Southern Asphalt & Construction Co. at Birmingham, Ala., busier than ever before.

Southern Railway shops at Spencer, N. C.; Knoxville, Tenn., and Atlanta, Ga., returning to full time.

Cotton Belt railroad shops at Pine Bluff, Ark., begin operations again after three weeks' shutdown.

Lockhart (Fla.) mill of the Jackson Lumber Co. running again, after repairs and remodeling.

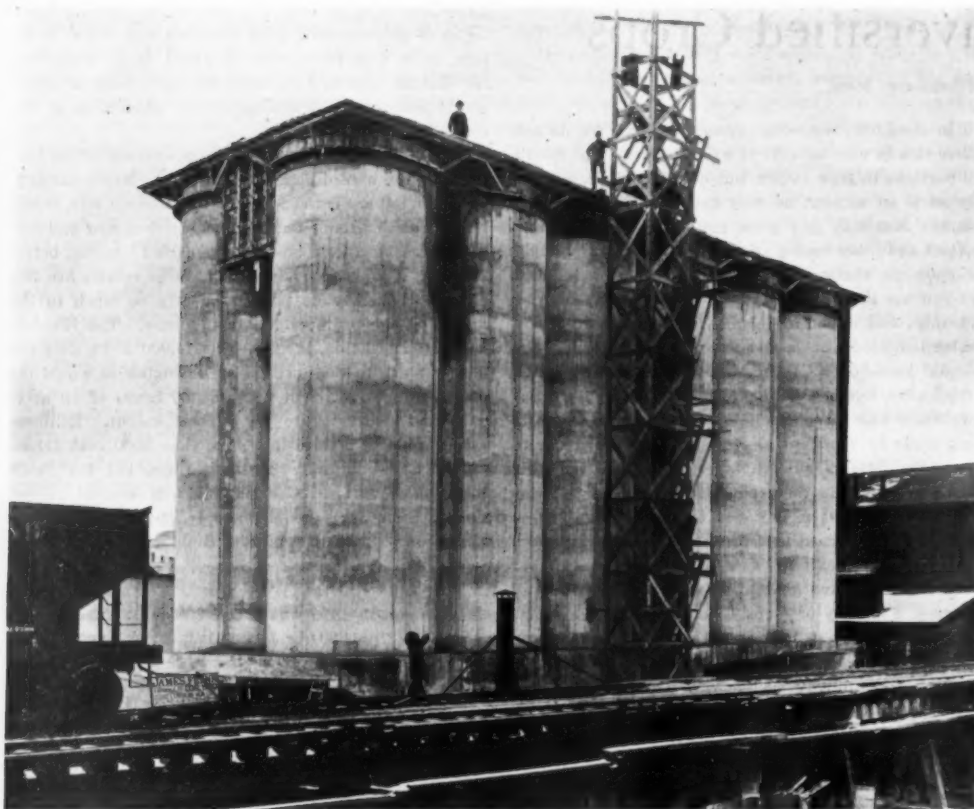
## Contract for Cape Lookout Breakwater.

Contract for constructing the breakwater at Cape Lookout, near Wilmington, N. C., has been awarded to D. L. Taylor & Co. of Medina, N. Y., who were the lowest bidders. This contract calls for as much of the breakwater and shore connection as available and authorized funds, \$1,200,000, will permit. The breakwater will be 7000 feet long, deposited in water up to 42 feet deep, the specifications estimating that 1,221,700 tons of stone will be required for the breakwater proper and 8300 tons for the shore connection. Major H. W. Stickle, U. S. A., stationed at Wilmington, is the engineer in charge.

## To Be Running in the Spring.

Secretary J. B. Trescott of the Mississippi Electric Navigation Co. writes from St. Louis, Mo., to the MANUFACTURERS RECORD that his company expects to have its first boat in operation between St. Louis and New Orleans in the early spring, and that other boats will follow as rapidly as they can be constructed and placed in service.

The report of the tenth annual meeting of the West Virginia Board of Trade has been published in attractive pamphlet form.



CONCRETE STORAGE BINS FOR SAND AND CRUSHED STONE.

### Concrete Storage Bins.

The Builders' Supply Co. at Cumberland, Md., is having erected a sand and stone storage building which is somewhat of a departure from the usual type of structure used for this purpose. (See accompanying illustration.) The sand deposits and stone quarries operated by this company are some distance out of the city limits, and the material is shipped over the railroad to the city yards in hopper-bottom cars over an elevated trestle, from which the material is dumped into a storage yard for distribution by team and auto-truck.

The sand and stone were previously loaded into wagons by hand, and with a view to not only increasing the storage capacity, but obtaining a more economical method of handling the material, the company investigated the various types of storage buildings and selected a set of concrete bins. The view herewith was photographed during the construction of the building, before the machinery was installed, and shows the concrete bins completed with the forming for the roof slab still in place. The building is entirely of reinforced concrete, 89 feet long, 30 feet wide and 56 feet 8 inches high to top of roof slab. The first story forms a support for the bins, and contains two driveways running under bins lengthwise of building. Each driveway is 9 feet 6 inches wide, and has a clearance of 9 feet 8 inches in height to accommodate the largest auto-truck. The piers on which the columns rest extend above level of driveways and form a curb, the edges of which are armored with steel, and the exposed corners of the columns are encased with angle iron to prevent wear from the trucks.

A warehouse is to be built adjoining one of the driveways, and it will be arranged to have a loading platform extending under bins on a level with first floor of warehouse to facilitate loading out of mixed loads of building material and also allow loading and deliveries to be effected in stormy weather. Openings are left through the outside wall of driveway on opposite side of storage building for windows and doors.

On account of the limited room at the ends of the structure, and to permit better turning facilities for the large auto-trucks on entering and leaving the building, the first story was shortened and the bins designed to extend over the foundation line. Above the driveways, and forming the bottom of the bins, is a heavy reinforced concrete slab, through which are openings and spouts for loading wagons and trucks. Each bin is fitted with a heavy cast-iron especially designed spout, with undercut valve and operating lever arranged so that the driver can control the loading of the material in the trucks. The bin story is divided into 12 circular bins, 14 feet

in diameter and 36 feet deep, arranged in two rows of six bins each, and forming five interstice bins that are utilized for storage. The bin walls are monolithic, and were constructed continuously day and night by means of a moving form, provision having been made to enclose the walls and protect the concrete with steam heat during the cold weather. Above the bins, and formed by the continuation of the circular walls, is a cupola, which contains a concrete walk extending longitudinally over the bins. The cupola is covered with a concrete roof slab, above which is built a penthouse enclosing the elevating machinery and motor.

The openings at the ends of the driveway are fitted with Wilson steel roller doors and Lightwell steel windows with ribbed wire glass are placed in the cupola. Entrance doors are placed on each side of the cupola, and at the end is a large metal-clad door to provide for removal and replacing of machinery. The building and machinery equipment are arranged so that sand and crushed stone can be received in hopper-bottom cars and dumped into a track hopper at the side and near one end of the building. After being deposited in the hopper the material is fed through a spout with controllable gate into a double-strand chain bucket elevator, which conveys the material to the top of the building and discharges into a spout with a special turnhead. This turnhead connects with spouts leading direct into the nearest bins, and also discharges on a belt conveyor that runs lengthwise of the building over the bins. The belt conveyor is fitted with an especially designed heavy steel tripper with spouts arranged to discharge into the different bins. The walk over the bins is fitted with steel hand rails and necessary platform, and ladders are provided to give access to the machinery.

The power is furnished by two electric motors (from the General Electric Co., Schenectady, N. Y.), with belt and gear connections. The storage building was designed and erected by Deverell, Spencer & Co., Garrett Building, Baltimore. The machinery was furnished by the Weller Manufacturing Co. of Chicago.

### Running on Full Time.

A. E. Nelson, secretary and treasurer National Cast Iron Pipe Co., Birmingham, Ala., writes to the MANUFACTURERS RECORD:

"Our plant is running full, and has been practically the entire season. With reference to the outlook for the immediate future, it is rather difficult to forecast conditions. Inquiries have been of fair volume, a reasonable percentage of which have developed into contracts, this company securing its share of the business placed."

## Good Roads and Streets

### SOUTHERN HIGHWAY ACTIVITIES.

#### Details of Week's Progress in Improvements in City and Country.

Further details of road and street undertakings and bond issues mentioned below are given under the headings Construction Department and New Securities, published elsewhere in this issue.

The MANUFACTURERS RECORD invites from its readers information about road and street work projected or under way, photographs of good roads and discussions of matters pertaining to the betterment of the highways of the South.

#### Bonds Voted.

Bryan, Tex.—City voted \$12,000 bonds to pave streets.

Maryville, Tenn.—Blount county voted \$300,000 bonds to grade and macadamize roads.

Pineville, Ky.—Bell county voted \$250,000 bonds to construct roads and bridges.

#### Bonds to Be Voted.

Union, S. C.—Union county votes April 6 on \$200,000 bonds to construct roads.

Port Lavaca, Tex.—Calhoun County Seadrift Road District will vote on \$60,000 bonds to complete road.

Gate City, Va.—Scott county, Taylor district, votes March 9 on \$68,000 bonds to construct roads.

Kountz, Tex.—Hardin County Road District No. 1 votes February 20 on \$150,000 bonds to construct roads.

Victoria, Tex.—City votes March 23 on \$30,000 bonds to improve streets.

Welch, W. Va.—McDowell county, Big Creek Magisterial District, votes March 20 on \$165,000 bonds to construct roads.

West Palm Beach, Fla.—Palm Beach county votes March 23 on \$800,000 bonds to construct roads, etc.

Yadkinville, N. C.—Yadkin county votes March 25 on \$200,000 bonds to improve roads, etc.

#### Contracts Awarded.

Baltimore, Md.—City awarded \$196,588 contract to grade and pave with granite blocks on concrete base second section of Key Highway; 3300 linear feet.

Baltimore, Md.—City awarded \$1800 contract to grade portion of Woodberry avenue.

Baltimore, Md.—State awarded \$42,772 contract to construct concrete roads.

Baltimore, Md.—City awarded \$17,600.50 contract to pave streets and alleys with granite blocks and vitrified brick.

McKinney, Tex.—City awarded contract for 25,000 square yards paving.

Palo Pinto, Tex.—Palo Pinto county awarded \$96,000 contract to improve roads in District No. 1, aggregating 36.7 miles on nine roads.

San Marcos, Tex.—Hays county awarded \$5527 contract to construct 6½ miles of road.

Smithfield, N. C.—Johnston county, Ingram township, awarded contract to construct roads costing \$40,000.

#### Contracts to Be Awarded.

Baltimore, Md.—City receives bids until March 3 for 64,000 square feet of cement footway around city property.

Baton Rouge, La.—City will pave 16 miles of streets at estimated cost of \$350,000.

Joplin, Mo.—City will improve streets at a cost of \$1047.21.

Richmond, Va.—Henrico county invites bids until March 1 to improve 11.60 miles of roads.

Shreveport, La.—City will pave streets at cost of \$20,000.

Tampa, Fla.—City receives bids until February 16 for 9600 square yards of paving and 7544 linear feet of curbing.

### Southern National Highway.

Governor Locke Craig of North Carolina has sent to the Governors of Virginia, Tennessee, Arkansas, Texas, New Mexico, Arizona and California copies of resolutions adopted by the General Assembly of his State urging co-operation of the other States for the comple-



## HIGHWAYS AT GADSDEN, ALA., IN WHICH SLAG WAS USED.



No. 1—TUSCALOOSA STREET.



No. 2—LOOKOUT MOUNTAIN ROAD.



No. 3—TURRENTINE AVENUE.



No. 4—FIFTH STREET.

tion of the "Southern National Highway," a project that was advanced at a meeting at Asheville, N. C., in February, 1913, by a commission appointed by the Governors of Southern States and looking to a great highway from Washington to Richmond, Va.; Durham, N. C.; Knoxville, Tenn.; Nashville, Tenn.; Memphis, Tenn.; Little Rock, Ark.; Hot Springs, Ark.; Dallas, Fort Worth and Sweetwater, Tex.; Roswell and Mesquero, New Mexico; Clifton, Phoenix and Yuma, Ariz., to San Diego, Cal. Col. Bennahan Cameron, a member of the House of Representatives of North Carolina, who has been an enthusiastic advocate of the project, writes to the MANUFACTURERS RECORD:

"The route is to be a double route from Salisbury, N. C., to El Paso, Tex., the one crossing the Mississippi at Memphis, the other passing through Atlanta, New Orleans and San Antonio, Tex. The country will be surprised to learn how much of this line is now improved and how little will be required to start auto tourist travel over the Southern route, as it is now going over the Lincoln highway. We are now uniting and redoubling our efforts to secure this result in the near future."

## A \$250,000 Bond Issue Voted.

The result of the election in Bell county, Kentucky, on February 13 on issuing \$250,000 bonds for road construction was affirmative. Prompt action will be taken by the County Commissioners, Pineville being the county-seat of Bell county, to arrange for the extensive work contemplated. Bailey & Culton, Pineville, will be the engineers in charge, and plans will include about 54 miles of macadam roads and two bridges. Wagons for hauling crushed stone, rollers and spreaders will be purchased.

## A \$96,600 Road Contract.

Contract for constructing about 30 miles of road in Tarrant county, Texas, has been awarded to Clynes & Duncan of Newark, N. J., for \$96,600. This is one of the various contracts required for Tarrant county's \$1,000,000 highway system, for which bonds were voted. J. C. Travilla of Fort Worth is the engineer in charge.

## Paving to Cost \$350,000.

Paving to cost about \$350,000 will be undertaken by the Commission Council of Baton Rouge, La. It is proposed to pave about 16 miles of streets, and preparations are now being made to invite proposals for the work. This entire work will not be undertaken at once, but will extend throughout the year.

## Road Bonds for \$300,000.

Bonds for \$300,000, to be expended on road construction, were voted on February 13 by Blount county, Tennessee. The county commissioners, offices at Mayville, will soon consider the preparation of plans for the improvements.



No. 5—CONSTRUCTING PAVEMENT BETWEEN STREET RAILWAY TRACKS.

## SLAG IN GADSDEN HIGHWAY WORK.

By CHARLES L. MARSH, City Engineer.

During the summer of 1912 I rebuilt part of Tuscaloosa avenue with a basic slag foundation and a limestone screenings top. This road was in very bad condition, being full of mud holes and rough slag or clinkers that had been dumped here and there on the road. This road was graded to established grade line, the base or subgrade 16 feet wide and flat, and rolled with a 10-ton 3-wheel roller. I then placed the basic slag five inches thick at the edges and eight inches thick at the center, and rolled thoroughly with a 10-ton roller. Then the limestone screenings, from one-half inch down to dust, were spread on the 16-foot base, 12 feet wide and two inches thick and rolled until it was packed hard. About two months after the completion of the work the screenings had covered the entire width of the road. The travel over this road is medium heavy, consisting of a five-ton motor truck which hauls cotton from Gadsden to Alabama City Mills, one and two-ton wagons, delivery wagons, etc. This road has been used two winters and three summers, and not one cent for repairs has been spent on it. The accompanying picture (No. 1) shows the condition of the road now, which is very good. The crown is three inches. The cost was 23 cents per square yard, including every item except the engineer. The slag was hauled two miles. The screenings were shipped in at a cost of 90 cents per ton. The average haul for the screenings was three-quarter mile.

The same year I rebuilt part of 12th street with the same construction, except I used one inch of screenings and wet them before rolling. The dust on this work is never very much, while on Tuscaloosa avenue it gets very dusty during long dry spells. This street cost 25 cents per square yard. The increase is due to a longer haul of slag and using the water to wet the screenings. This street is in good condition, except a few places where the screenings have worn away and let the water collect in the low places. They could be repaired now at a little expense. This work was done with day labor

at \$1.50 and teams at \$3.50 under the personal supervision of the writer.

Picture No. 2 shows a slag road covered with limestone screenings, going up Lookout Mountain on a 7 per cent. grade. This road was constructed last February, and is now in a number one surface and condition. City convicts built this road at a total cost of 35 cents per square yard.

Picture No. 3 shows a sand-clay gravel street that was built eight years ago, and to date not one penny has been spent on it. It needs resurfacing very badly. This street was graded and eight inches of sand-clay gravel was then placed and rolled thoroughly. Gravel was hauled 1½ miles, and work was done by city convicts. The total cost was 41 cents per square yard. The city has about 10 miles of good sand-clay gravel streets.

Picture No. 4 shows an oiled street. This street was of sand-clay gravel construction. The surface was swept clean and then four-tenths of a gallon of No. 6 Standard Oil Co. road oil was applied by gravity. A coat of screening was then applied, then another coat of three-tenths of a gallon per square yard of road oil, then another coat of screenings and sand. The road was opened for traffic at once. The oiled streets, about two miles of them, have, as the picture shows, a mat of oil and stone from one-half to one inch in thickness. This picture was taken four months after the oil was applied.

Picture No. 5 shows the gang of the street railway company putting down the concrete along their track. The car company does its own work, and uses 8 inches of 1-2-4 mix of slag concrete. A gang of 12 men and a foreman average 250 feet of eight-foot width in nine hours.

The concrete along the track is covered with tarvia and sand for a wearing surface. This work was completed last February, and to date shows no signs of wearing through. The difference between this kind of pavement and that of the rest of the street, which is a bituminous concrete, is very hard to detect. The street railway has just completed one mile of this kind of construction at a cost of \$1.15 per square yard.

Gadsden, Ala.

## To Build a \$250,000 Addition.

About \$250,000 will be invested by the Thomaston (Ga.) Cotton Mills to build and equip an additional mill. The company is planning to construct a 400x125-foot structure capable of containing 25,000 spindles and 600 looms, 15,000 of the spindles to be the first installation. J. H. Mayes, Charlotte, N. C., has the engineering in charge.

## Gone to the Wabash.

Edward F. Kearney has been appointed one of the receivers of the Wabash Railroad, and it is understood that he will become president of the road after the receivership, when it is reorganized. He is also first vice-president of the Texas & Pacific Railway. The other receiver of the Wabash is Edward B. Pryor.

## RAILROADS

[A complete record of all new railroad building in the South will be found in the Construction Department.]

### CLINCHFIELD'S EXTENSION.

#### Last Spike Is Driven and Line to Be Opened About April 1.

Track has been completed on the extension of the Carolina, Clinchfield & Ohio Railway from Dante, Va., to Elkhorn City, Ky., 35½ miles, by driving the last spike at a point near Dante, according to a report from that place, which also says that George L. Carter, formerly president of the South & Western Railway—the nucleus around which the Clinchfield grew—wielded the maul and drove the iron into the wood, thus finishing the line of steel from Elkhorn City, Ky., to Spartanburg, S. C. President Mark W. Potter, Vice-President J. J. Campion and other officers of the Clinchfield road were also present.

The extension, which is constructed in the most substantial manner for heavy traffic, connects with the Chesapeake & Ohio Railway at Elkhorn City, thus enabling the Clinchfield to ship coal from the mines on its line in the southwestern part of Virginia to the North and West, as it has done for some time to the South, for which latter connection is made with the Seaboard Air Line and the Southern Railway in North and South Carolina. It is anticipated that the extension will be placed in full operation about April 1. Ballasting has yet to be done.

### Electric Signals Installed.

An electric automatic block signal system has just been placed in service by the Southern Railway on its double-tracked line between Atlanta and Gainesville, Ga., 53½ miles; also from Howell to Austell, 15 miles. The former is on the line to Washington and the North, and the latter on the line to Chattanooga and Birmingham. This completes the Southern Railway's installation of these signals in the vicinity of Atlanta, as they were already in service between Atlanta and Roseland, on the line to Macon and Florida.

There are 73 signal towers between Atlanta and Gainesville at intervals of about two miles. There are 23 towers between Howell and Austell. The signals are of the three-position type. They indicate danger if a train is in the block immediately in advance of the signal, and caution if it is in the second block ahead. If beyond there a clear track is indicated. It is also stated that if there be a broken rail, an open switch or other obstruction the signal will stand in the danger position.

For operating the signals power will be supplied from the Inman shops, being purchased from the Georgia Railway & Power Co. In addition to operating the signals, this power will light the stations and other railroad buildings on the route.

### Two Oklahoma Railroad Plans.

J. A. Quinn of Pryor, Okla., representing the industrial committee of the Pryor Commercial Club, is endeavoring to revive two railroad projects, one of them the Cherokee Belt & Interurban Railroad, which was chartered and surveyed in April, 1910. This line, to be operated by either steam or electricity, would leave the Midland Valley Railroad at Skiatook, cross the Santa Fe at Collinsville, the Iron Mountain and the Frisco at Claremore and the Missouri, Kansas & Texas at Pryor, and, with an extension of 10 miles due east, would tap the Missouri, Oklahoma & Gulf Railroad at Salina. This short railroad of 53 miles would connect six important trunk lines and five prosperous revenue-producing towns and communities. The towns will do everything they possibly can to assist in reviving it.

The other project is the Oklahoma & Cherokee Central, which was projected some years ago to run from Nowata to Pryor. As surveyed it would tap the oil and gas fields between Nowata and Chelsea and the coal fields midway between Chelsea and Pryor. The line is graded from the Verdigris River near Nowata to Chelsea, where it would connect with the Frisco Railway, and with an extension to Pryor would tap the Missouri, Kansas & Texas. Efforts will be made to interest new people and money.

sea, where it would connect with the Frisco Railway, and with an extension to Pryor would tap the Missouri, Kansas & Texas. Efforts will be made to interest new people and money.

### New Equipment, Etc.

Atchison, Topeka & Santa Fe Railway has ordered 200 more tank cars from the Pressed Steel Car Co., Pittsburgh.

Illinois Central Railroad is reported in the market for 40,000 tons of rails.

Kansas City, Clay County & St. Joseph Railway has ordered 5 all-steel interurban electric cars from the Cincinnati Car Co.

Southern Railway has ordered 500 steel underframes for box cars from the Lenoir Car Works, Lenoir City, Tenn. It has also ordered 4000 tons of rails from the Tennessee Coal, Iron & Railroad Co., Birmingham.

Florida Railway has ordered a combination passenger car from the Live Oak Foundry & Machine Shop, Live Oak, Fla.

Charleston-Dunbar Traction Co., Charleston, W. Va., will, it is reported, purchase an electric locomotive and a motor express car.

Columbia (S. C.) Railway, Gas & Electric Co. is building 6 double-truck electric cars in its own shops.

Atlantic, Waycross & Northern Railroad, St. Mary's, Ga., is reported about to purchase 10 miles of rails for an extension.

### Radford-Willis Southern Railway.

The Radford-Willis Southern Railway Co., authorized capital \$300,000, has been organized at Radford, Va., to build the proposed railroad from there to Willis, Va., about 25 miles. The line is to be of standard gauge and will be operated with steam locomotives. It will follow Little River and Indian Creek. C. W. Simpson will make a location survey.

J. L. Vaughan of Radford is president; E. F. Strong of Floyd county, first vice-president; R. L. Gardner of Radford, second vice-president; W. L. Castle, secretary and assistant treasurer; A. J. McClung, treasurer and assistant secretary. The directors also include Eli Wade, G. A. Willis, W. J. Donnelly and W. H. Dickerson of Floyd county, and J. G. Osborne, A. Geisen, William Ingles and George Reed of Radford.

The road will furnish transportation facilities to a rich agricultural and timber region.

### Rosston to Buffalo, Okla.

The Alva, Buffalo & Colorado Railroad Co., capital \$10,000, has been chartered in Oklahoma to build a line about 20 miles long from Rosston to Buffalo. Connection will be made at Rosston with the Wichita Falls & Northwestern Railway. Buffalo is the county-seat of Harper county. Either electricity, gasoline or steam may be used for motive power by the new company. Construction is expected to cost, it is stated, about \$12,500 per mile. The incorporators are J. H. Moran, L. A. Walton, George Stafford, L. L. Walton and Ida M. Morgan, all of Alva, Okla.

### Norfolk & Western's Electric Tests.

The Norfolk & Western Railway is not yet regularly operating electric locomotives on any part of its line between Bluefield and Vivian, W. Va., 29 miles, which is being electrified for the purpose of facilitating the handling of large coal trains. The company is now conducting tests of the new motive power preparatory to putting it in service. A report from Bluefield says that the electrification is complete between Morgan and Ruth, seven miles. This is where the tests are being made.

### Daily Output of 2500 Tons.

The Southeast Coal Co., Paintsville, Ky., will develop 2000 acres of coal land and plans a daily output of 2500 tons of coal. Bids for mining machinery will be opened soon, and proposals are to be addressed to H. La Viers soon, and proposals are to be addressed to H. La Viers, general manager, Paintsville.

## TEXTILES

[A complete record of new textile enterprises in the South will be found in the Construction Department.]

### The French Broad Mill.

The French Broad Manufacturing Co., Asheville, N. C., will probably proceed with its recently-mentioned plan to build a spinning mill and reinforced-concrete warehouse. Its mill building will be of standard mill construction, 169 feet 8 inches by 104 feet, two stories high, for equipment with 5000 spindles and accompanying machinery to spin weaving yarns. The warehouse will be 100x100 feet, one story, of reinforced concrete. Lockwood, Greene & Co., Boston and Atlanta, are the architects-engineers in charge.

### The Cotton Movement.

In his report for February 12 Col. Henry G. Hester, secretary of the New Orleans Cotton Exchange, shows that the amount of cotton brought into sight during 196 days of the present season was 11,023,937 bales, a decrease under the same period last year of 1,615,662 bales. The exports were 4,518,370 bales, a decrease of 2,171,343 bales. The takings were, by Northern spinners, 1,695,258 bales, a decrease of 327,433 bales; by Southern spinners, 2,089,021 bales, a decrease of 215,365 bales.

### A \$25,000 Bleachery Company.

A company capitalized at \$25,000 will be organized to build and equip a bleachery at Rome, Ga. It will clean cotton lintners to be used in the manufacture of absorbents and explosives. J. F. Allison, R. L. Critchfield and A. B. David of Calhoun, Ga., are planning the enterprise.

### Textile Notes.

Trenton Cotton Mills, Gastonia, N. C., will build a 7000-spindle addition.

Efird Manufacturing Co., Albemarle, N. C., is reported as to add looms.

J. H. Separk, Gastonia, N. C., is reported as planning to build a 5000-spindle fine-yarn mill.

C. M. Dunn, Gastonia, N. C., is reported as planning to build a 6000-spindle fine-yarn mill.

Washington Woolen Mills Co., Fredericksburg, Va., has increased capital stock from \$100,000 to \$150,000.

It is reported that the Cliffside Mills, Cliffside, N. C., will build a 500-foot addition and install 20,000 spindles with 200 looms and accompanying machinery.

Shamrock Hosiery Mills Co., Winston-Salem, N. C., has changed name to Hanes Hosiery Mills Co. and increased capital stock from \$100,000 to \$200,000.

American Glove & Knitting Co., Muskogee, Okla., recently incorporated with \$5000 capital stock, has organized with the following officers: W. L. Lindhard, president; T. J. Cory, vice-president; R. S. Davis, secretary-treasurer. This company has a 100x50-foot brick and stone building in which to install its equipment of machinery.

The Gainesville (Ga.) Hosiery Mills has purchased the R. E. Green Cotton Mills, containing 2680 spindles, and will manufacture knitting yarn for hosiery. The company's hosiery knitting mill, to be erected, will be a 150x50-foot three-story building equipped with machinery for the manufacture of hosiery. This company's organization and plans were recently stated.

Revolution Cotton Mills, Greensboro, N. C., has let contract to the Draper Company, Hopedale, Mass., for about 1100 Northrop looms. This modern weaving machinery is for installation in the \$1,250,000 Revolution enlargement heretofore detailed. About 40,000 spindles, 200 cards, etc., will be included in the equipment, the daily capacity to be about 1200 pieces of cotton goods.

Perkins Hosiery Mills, Columbus, Ga., will add eight cards and other machinery, contracts having been awarded. This company is consolidating steam plants, installing new boilers, constructing chimney, etc., to effect economies, the steam being for heating, dyeing, finishing, boxmaking, etc. It has purchased the Massey Hosiery Mills, and both plants are operated by hydro-electric power. The capital stock of the Perkins company will be \$250,000.



## FOREIGN NEEDS

Machinery and equipment wanted abroad are mentioned in many letters received by the MANUFACTURERS RECORD, which is so widely read in foreign countries that we are in constant receipt of many letters from all parts of the world. For the benefit of our subscribers seeking foreign trade we publish the following extracts from recent letters:

### Specialties for Australian Trade.

Clarke & Co., 24 Bond street, Sydney, Australia, write to the MANUFACTURERS RECORD as follows:

"We thank you for publicity you have given our letter to Chandlee & Chandlee. The following few paragraphs we have also communicated to that firm:

"We have received communications from a few firms handling heavy machinery, at present time rather out of our line. We specialize more particularly in goods which may be described as 'long-felt wants' for the general public. When we find an article which, in our judgment, is likely to exercise a strong appeal to the general public we make a special department to handle this one line thoroughly. We operate from our various branches through a trained force of salesmen. The men in each department specialize on one particular line. We have found that concentration in this manner is the key to tremendous success. Our men in this way, to all intents and purposes, call at every house in every town and rural district in Australia and New Zealand. Though we have numbers of articles submitted to us, it is only the occasional one that is suited to our methods. When we find a particular article the business that we do in distributing this usually surprises our suppliers, inasmuch as when we undertake to handle any line the territory is covered infinitely more thoroughly than is possible by any other method of distribution. We have found that there are a number of these lines languishing on the market owing to improper methods of distribution. Most of them require a personal introduction to consumers with a personal explanation and demonstration as to their utility, and the handling of this business is our 'long suit.' To give you an idea, the writer organized the distribution of a little deodorizing and disinfectant apparatus for a large American firm. Some 60,000 or 70,000 of these articles were distributed. At the present moment we are distributing a small textile article which we find has a large appeal when properly demonstrated by the personal demonstrating method. We are also handling another article which might be described as hardware. Our system of personal demonstration shows that it is possible to convince nearly every householder of its utility."

### Greece Wants Various Products.

Bensussan, Sides & Co., Salonique, Greece, write to the MANUFACTURERS RECORD as follows:

"Have the kindness to put us in connection with some suitable manufacturing and exporting houses of your country who can supply the following goods: Paris nails (pointes de Paris), packed in sacks 19 to 20 kilos of nails each, secured in strong paper and five sacks packed in one large sack; the packing of the small and large sacks ought to be extremely strong and the openings well secured. Each specification or proposal should give an extra minimum 1.45 of a franc above the real price. Each proposal ought to be calculated for a minimum delivery of 10 tons at a single shipment. We would like to have samples and the very lowest prices possible for 100 kilos, c. i. f. Salonique, galvanized wire for B. W. G. No. 12 of two strands and 4 points at a distance of 6 millimeters on the bobbin of 18 to 19 kilos weight net; price per 100 kilos, c. i. f. Salonique, annealed iron wire Y. de P., No. 12, in rows of 25 kilos, not counting the package, four rows to be packed together and the price to be named for 100 kilos c. i. f. Salonique. Bed springs, double, 22x6, 36x6, 36x7 and 36x8, in packages of 23 kilos net, put up in tarred paper and cloth and every four packages to be put up in one large package, the price to be made of 100 kilos c. i. f. Salonique. Wire gratings and wirework and rivets; tacks; shoe nails; iron and tin; sheet iron, plain and galvanized; bolts; steel and iron of all kinds; wooden shoemakers' pegs; sole leather in packages weighing from 5 to 8 kilos; matches; candles; rice; coffee; sugar; twine; rope;

draperies and hangings; sheet zinc; cigarette paper; canned alimentary products; Calcutta bagging; wax cloths and paper; lead and iron pipe; handkerchiefs; towels; cotton goods, plain and printed; iron wire of all kinds, uncoated, copper and tin coated, prices to be for 100 kilos c. i. f. Salonique. In order to save time, I would ask your manufacturers to communicate with me at the earliest moment direct, and we shall appreciate your attention to this important matter in full measure."

### Wanted for Norway.

Peter B. Müller, Nils Juelsgt 9, Christiana, Norway, writes to the MANUFACTURERS RECORD as follows:

"After the European war broke out and exportation partly stopped from Germany and England, Norway had to throw her eye on the American market to get necessities she wanted. This had some difficulties, however, being accustomed to low prices and freights and also very reasonable terms, as the Americans required rather high prices and not even cash against documents, but cash with the order or banker's credit in New York or another place. Adding to this the long distance and immense freights, there were many difficulties in opening business between the two countries. An American told me afterward that there is only cash business in America, of which there may be too little here among people within the country. I believe that if the Americans would agree to sell their products against documents here or cash after 30 days, and, moreover, would be more disposed to appoint sole representatives, who always could look after their business, the outlook for selling American goods would be considerably greater. The English and German houses have their agents here on a certain commission, and these representatives are calling every day on the customers, keeping a close watch on what the customers are in want of. Of course, the prices have to be reasonable to be able to compete with other countries, for instance Germany, which is very cheap. To this you may perhaps say the American goods are superior; well, that is so, but very often the German are good enough. With regard to my personal interest in American goods, I beg to say that I should want business relations in yellow canes, glycerine, tin, turpentine (mineral and wood), and also other goods which your country is interested in exporting."

### A Letter from Constantinople.

D. M. Demetriades & Co., Moumhan Yaldiz Han, Constantinople, Turkey, write to the MANUFACTURERS RECORD as follows:

"Our market to trade's centers has been greatly affected by the war. With the exception of absolutely necessary alimentary products, orders of import have been suspended, merchants now realizing all they can in expectation of a more normal moment for replacing stock. It seems this will continue until the resumption of a normal state of business, and all stocks on imported goods will in the meantime be exhausted. The financial position of our market is relatively better than was expected. It is anticipated that immediately after the close of hostilities large orders on every kind of imported goods will be given, and as European industry, having been suffering by the war, will not be in a state to meet all the requirements of its foreign trade, it will then remain for American industry to gain ground in our importing trade. It will be the propitious moment for American manufacturers to replace a great part of European specialties and goods imported in the Oriental territory. American manufacturers desirous of extending their trade to the Oriental territory must now prepare the ground for transactions, establishing their business relations. We solicit correspondence from every business man desiring to enter into transactions with the Orient, and we are at his disposal for any information he will require."

### Celluloid, Cotton Oil, Hard Rubber, Etc.

H. Montanari, Rue De Paradis 51, Paris, France, writes to the MANUFACTURERS RECORD as follows:

"I avail myself of the opportunity to ask if you are not issuing some yearbook with names of your manu-

facturers. I would appreciate one copy which should help me certainly to favor American industry with some of the articles I am looking for, in order to replace some German makes. Also could I apply to your experience for finding out some leather imitation made of vulcanite and perhaps a mixture of celluloid, according to sample I enclose here. That article was made by German makers, and I have a good sale of it. I am looking out to replace a great variety of German articles and, under many, the following ones: Ebonite, also called hard rubber and vulcanite, in plates, rods and tubes; pipe stems; stylographs and office requisites; gutta-percha in very thin tissue; paints and varnishes for insulating purposes. And as new article I want also cotton oil, for sale to our African exporters."

### Wants to Represent Manufacturers.

Antonio Aran, Oribau 158, Barcelona, Spain, writes to the MANUFACTURERS RECORD as follows:

"I am interested for the introduction of several products into Spain, in order to substitute many supplies received from German and Austrian industries unable to continue their export trade. There is a favorable occasion to open an active business between countries not engaged in this great war, but a careful examination of comparative terms of sale, etc., is to be taken into consideration if American manufacturers wish for a continued sale of their products. The articles I am interested to represent are as follows: Patent colt, glazed kid and box-calf leather; supplies for shoe manufactory (brass nails, cement and polishing pastes); paints, varnishes, anilines and chemical products for these lines; general electric supplies and accessories; tools (files, saws, chisels, etc.)"

### Wants Ice Manufacturing Equipment.

R. T. Graham, Bel-Air, St. Michael, Barbados, W. I., writes to the MANUFACTURERS RECORD as follows:

"I wish a small machine to make ice for my own use, not for sale. Therefore, I put the capacity at 25 pounds, as that would be the amount used per day. I could not use a much larger one, as the supply of electric power here is quite limited."

### Wants American Leather.

Faria & Filho, Largo da Trindade, 30, Porto, Portugal, write to the MANUFACTURERS RECORD as follows:

"We should have greatest interest to represent American houses of leathers, and if you are in a position to give us some addresses, we should be very much obliged to you."

### To Build Large Plant.

The Graham County Lumber Co., Andrews, N. C., will build a large woodworking plant, and has purchased a 30-acre site for the enterprise. It plans to manufacture furniture stock, and will consume annually more than 10,000,000 feet of chestnut, oak and other hardwoods. Its equipment will include kilns, veneer machinery, electric motors, etc., these motors to be supplied with electricity from generators driven by steam made from the waste wood of the plant. Tannic acid will be manufactured from sawdust and other waste material.

### For Gauley Valley Developments.

Capitalized at \$500,000 the Gauley Valley Coal & Oil Co. has been incorporated to mine coal and drill for oil in the Gauley Valley of West Virginia. Offices are at Summersville, W. Va., and the incorporators are W. C. Reddy of Summersville, J. H. Nash, Jr., J. G. Brinting and C. L. Smith of Charleston, W. Va.

### Wants Fabrics for Aeroplanes.

Elmer D. Pendleton, P. O. Box 112, North Fond du Lac, Wis., writes to the MANUFACTURERS RECORD that he wants data and prices on high-grade linen fabrics, cotton and durable silk fabrics for aeroplane coverings.

## MECHANICAL

Illustrations and descriptions having news value pertaining to developments in machinery, mechanical devices and inventions will be considered for use in this department.

### "Zyro" Anti-Corrosive Metal Silos.

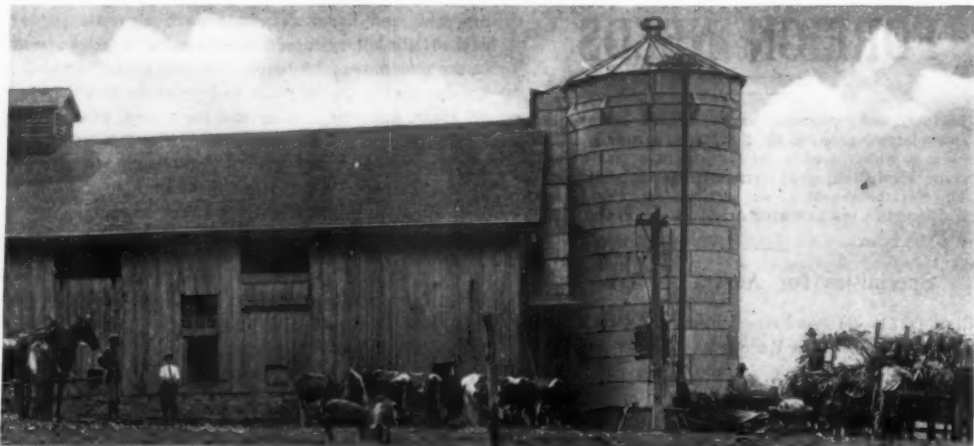
Though developed comparatively recently, the silo has demonstrated its value to the farmer who feeds more than six head of stock. Nearly 150,000 silos are now claimed to be used in the North Central States, and the silo has begun to be recognized as a necessity in the South and Southwest. After the silo had proven unquestionably profitable it then became necessary to decide on which style would be the most profitable. Various opinions on this have been expressed and important essentials have been carefully studied.

Air tightness is the first essential to any silo, although this alone will not make it most efficient. It must not be affected by changing weather conditions either when full or empty, its doors should be absolutely air tight, its walls must be moisture-proof to prevent the escape of the juices of the silage which keep it moist and palatable and sufficiently heavy material must be used in construction to insure the necessary strength to meet all conditions.

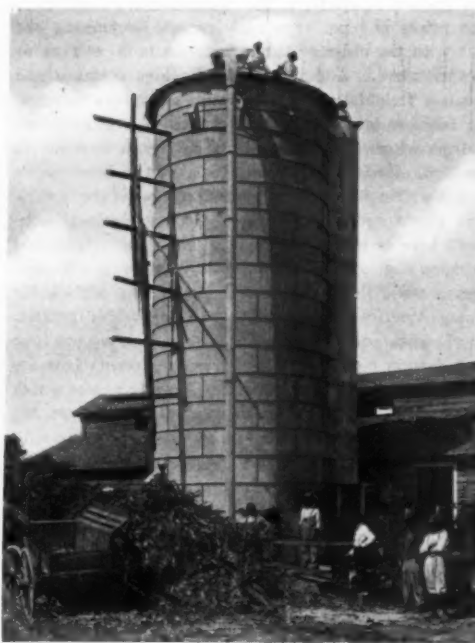
After careful study and thorough test a construction and material of high rust-resisting qualities, embodying a large number of these desirable features in a reliable form, are said to be incorporated in the "Zyro" galvanized anti-corrosive "No-Co-Ro" metal silo manufactured by the Canton Culvert & Silo Co. of Canton, O.

"Zyro" metal silos are constructed of sectional anti-corrosive metal sheets, flanged on all sides and made in uniform length and width. The flanges serve to strengthen the silo walls along the joint of every sheet, while a bottom double flange on each sheet forms a watershed just above the joint, which is calked with a special elastic cement unaffected by moisture, cold or heat. An important construction essential is the smooth inside walls, which are obtained by flanging each section outward and bolting the sections together through these projections. Extra heavy gauge metal is used for the lower rims or sections of the silos, the last rim being encased in the concrete foundation.

All silos should have strongly-built foundations placed on solid ground. The foundation floor and base walls should be made of concrete composed of one part Portland cement to two parts sharp sand and four parts stone or coarse gravel. It is said to be a good plan to cover the bottom of the silo bed with three to four inches of fine gravel, thoroughly tamping before laying concrete, and the concrete floor should taper from the sides to a point somewhat lower to the center. Foundation side walls should extend six inches below freezing point



"ZYRO" METAL SILO, 118 TONS CAPACITY, AT ST. MARY'S (KY.) COLLEGE.



"ZYRO" METAL SILO, 165 TONS CAPACITY.

or not less than three feet in depth to prevent rats from digging under. These foundation walls should be at least 12 inches thick, with the first row of metal sheets centered and imbedded not less than 12 inches in the concrete.

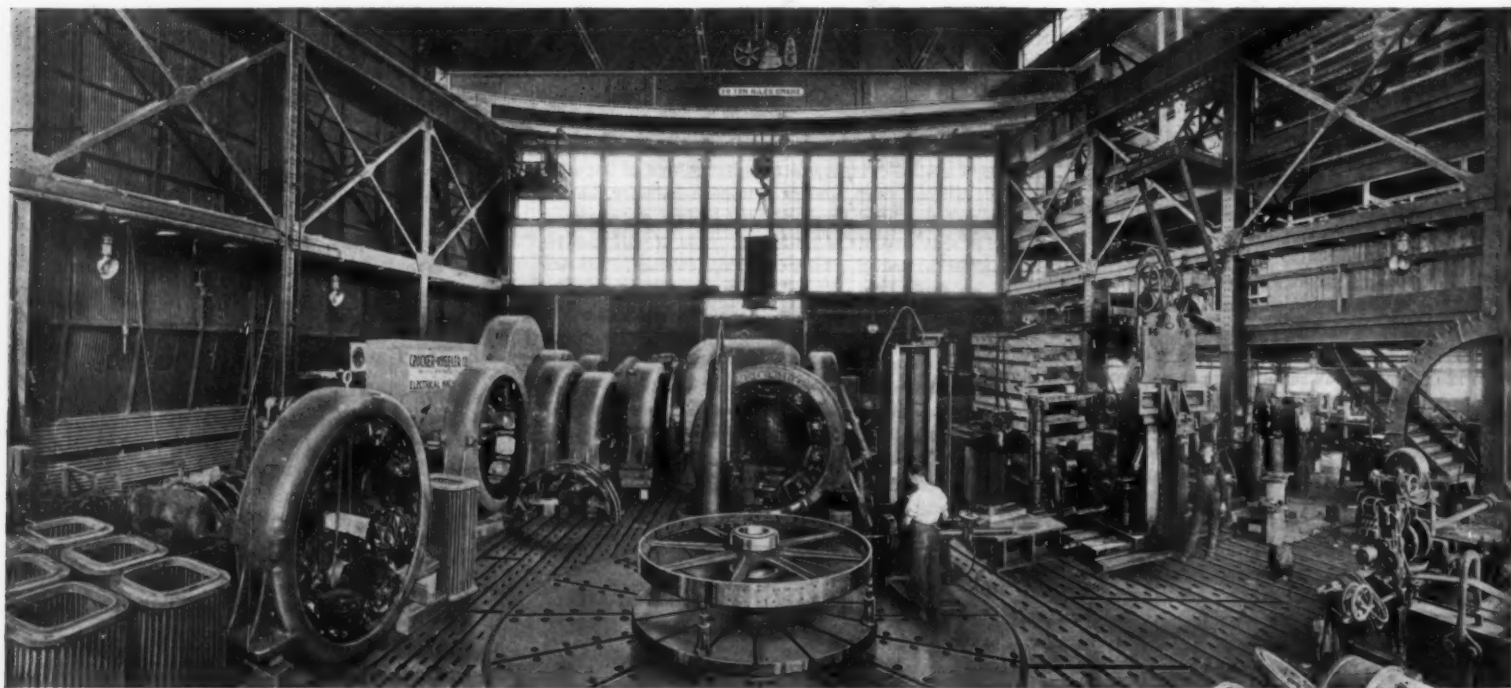
A catalogue has been issued by the Canton Culvert & Silo Co. describing and illustrating "Zyro" silos,

which have been constructed in all parts of the country. In this catalogue is given a table of standard sizes from 13 to 400 tons capacity, approximate weights, estimated tonnage and feeding capacity of "Zyro" metal silos.

### Special Shop for Machining Large Electrical Apparatus.

The question of machining large electrical apparatus has been more or less difficult for the electrical manufacturers to handle without much study. To a great extent this problem is said to be practically solved by the development of a large floor plate shop at the Ampere (N. J.) works of the Crocker-Wheeler Company, which is now and has been for the last few years capable of handling the machining of products regardless of size, which, judging from some of the generators turned out, seems to be limitless. The accompanying illustration gives an idea of the immense capacity of this shop.

The floor plate shop, which was designed and built by the engineers of the Crocker-Wheeler Company, is equipped with a sectional cast-iron floor 65 feet long by 47 feet wide. The sections are imbedded in solid concrete, and are true to level. In the center of the shop is a boring table 18 feet 10 inches in diameter, which is level with the floor, making it possible to turn work of considerably larger diameters than the table. The table supports a central boring bar and an Espen-Lucas boring stand. There is also in this mill a Newton slotter with a stroke of 82 inches, an Espen-Lucas horizontal drill and a six-foot radial drill press. A 30-ton Niles electric crane running on overhead tracks and having a span of 60 feet makes the work of moving the portable machinery and mill work comparatively easy. Three or four machines are said to be able to work simultaneously on one job.



LARGE FLOOR-PLATE SHOP OF THE CROCKER-WHEELER COMPANY.



# Construction Department

## IN ORDER TO FOLLOW UP

Properly the Construction Department items, please bear in mind the following statements:

### EXPLANATORY

The MANUFACTURERS RECORD seeks to verify the items reported in its Construction Department by full investigation. It is often impossible to do this before the item must be printed or else lose its value as news, and in some items it is found advisable to make statements as "reported" or "rumored," and not as positive information. If our readers will note these points they will see the necessity of the discrimination. We are always glad to have our attention called to errors that may occur.

### HOW TO ADDRESS

The name of one or more incorporators of a newly incorporated enterprise should always be written on letter addressed to the official headquarters or to the town of the parties sought, as may be shown in the item. Sometimes a communication merely addressed in the corporate or official name of a newly established company or enterprise cannot be delivered by the postmaster. By following these general directions the postoffice will generally be enabled to deliver your mail promptly, although it is inevitable that some failure by the postal authorities to deliver mail to new concerns will occur, as our reports are often published before new companies are known and before they have any established office for the receipt of mail.

### WRITE PERSONAL LETTERS

In communicating with individuals and firms reported in these columns a letter written specifically about the matter reported will receive better and quicker attention than a circular. In most instances a return postal card or addressed and stamped envelope should be enclosed with letter.

In correspondence relating to information published in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned.

### DAILY BULLETIN

The Daily Bulletin of the Manufacturers Record is published every business day in order to give the earliest possible news about new industrial, commercial, building, railroad and financial enterprises organized in the South and Southwest. It is invaluable to manufacturers, contractors, engineers and all others who want to get in touch at the earliest moment with new undertakings, or the enlargement of established enterprises. The subscription price is \$25 per year.

All advertising contracts in the Manufacturers Record for three months or longer include a subscription to the Daily Bulletin for the contract period, as well as a subscription to the Manufacturers Record.

### BRIDGES, CULVERTS, VIADUCTS

Ala., Gadsden.—City contemplates constructing cement bridge across Town Creek on 5th St. Address Mayor Bellenger.

Ala., Goshen.—Pike County Comms., Troy, Ala., will construct steel bridge over Conecuh River at Smiley's Crossing; R. P. Boyd, Asst. State Highway Engr., Montgomery, in charge of preliminary surveys.

Ala., Mobile.—City will construct about 1565 ft. reinforced concrete culvert, 4½ ft. by 10 and 12 ft.; City Comms. receive bids until Feb. 23; \$10,000 appropriated; H. Pillans, Mayor; Wright Smith, City Engr. (See Machinery Wanted.)

Fla., Tampa.—Atlantic Coast Line R. R., E. B. Pleasants, Ch. Engr., Wilmington, N. C., has plans for bridge across Hillsborough River at Polk St.; plans approved by War Dept. (Lately noted.)

Fla., West Palm Beach.—Palm Beach County votes Feb. 23 on \$300,000 bonds to construct bridges and roads. Address County Comms.

Ky., Louisville.—City will construct reinforced concrete arch culvert across Edwards Pond Branch in Dreschen Bridge St. between Letterie and Delmont Aves.; Board of Public Works, Roger G. McGrath, Secy., receives bids until Feb. 19. (See Machinery Wanted.)

Ky., Pineville.—Bell county voted \$250,000 bonds to construct bridges and roads; W. C. Bingham, Clerk. (Lately noted.)

Mo., Joplin.—City and Kansas City Southern Ry. (C. E. Johnston, Ch. Engr., Kansas City, Mo.) contemplate constructing steel and concrete viaduct on N. Main St.; estimated cost \$23,500; city to pay about \$10,000; J. B. Hodgdon, Commr. of Streets and Public Improvements.

Mo., Kansas City.—Park Board has plans for bridge to be constructed across Brush Creek at Benton Blvd.; main span 80 ft. wide; reinforced concrete; estimated cost \$40,000; connect new section of Benton Blvd. with Swope Parkway; Henry J. Yost, Mayor.

N. C., Danbury.—Stokes County Comms. will construct bridge 280 ft. long over Buffalo Creek at Germantown.

N. C., Yadkinville.—Yadkin county votes Feb. 25 on \$200,000 bonds to improve bridges, roads, etc. Address County Comms.

S. C., Spartanburg.—Southern Ry., H. W. Wells, Ch. Engr. Construction, Washington, D. C., has preliminary plans for bridge to span 6 tracks on N. Church St.; reinforced concrete; 130 ft. long, 55 ft. wide, allowing 12 ft. on each side for sidewalk and 30 ft. for paved street; supported by 3 rows of columns. (Lately noted.)

Tenn., Memphis.—City will petition Legislature to instruct Illinois Central R. R. (A. S. Baldwin, Ch. Engr., Chicago, Ill.) and Yazoo & Mississippi Valley R. R. (A. H. Egan, Gen. Supt., Memphis) to construct viaduct over tracks on McLemore Ave. (See Road and Street Work.)

Tex., Houston.—J. H. Richardson Co. of Houston is lowest bidder at \$37,397 to construct concrete bridge at Milam St.; E. E. Sands, City Engr. (Call for bids lately noted.)

Va., Radford.—City, W. M. Delp, Mayor, voted \$12,500 bonds for bridge across New River; to be built jointly by city and Pulaski county; county to pay \$12,500 also; Wm. Ingles, Engr. and Contr. (Noted in December.)

Va., Radford.—City, W. M. Delp, Mayor, voted \$12,500 bonds to construct lately-noted bridge across New River; structure to be built jointly by city and by Pulaski county; latter to pay \$12,000 also; Wm. Ingles, Engr. and Contr.

### CANNING AND PACKING PLANTS

Ark., Newark.—F. C. Hoyt is promoting organization of company to establish cannery.

Ga., Dublin.—John W. Grier of Moultrie, Ga., is reported as considering establishment of packing plant.

Md., Baltimore.—Wm. Schluderberg & Son, pork and beef packers, 3d and Bank Sts., propose to build addition; have not outlined plans.

Md., Williamsport.—Williamsport Canning Co. will increase capital stock from \$15,000 to \$25,000.

Mo., Hume.—Hume Electric Co., J. J. Ross, Mgr., is interested in proposed establishment of cannery for fruits and vegetables; asks data and prices; (electric or power from oil engine available. (See Machinery Wanted.)

Mo., Rich Hill.—J. M. Yarbrough, lately noted promoting erection of cannery, is as-

sociated with T. W. Wade in Springfield Canning & Supply Co., 410 Baker Bldg., Springfield; company has patented cooker; Mr. Yarbrough organizes canning companies and installs machinery; has made proposition to install Rich Hill plant of 10,000 cans daily capacity.

Okla., Sapulpa.—E. B. Ranking is reported as interested in securing erection of cannery.

Tex., Harrisburg.—C. J. Brown of Houston, Tex., is reported to build evaporated-milk factory.

Tex., Denton.—Chamber of Commerce is promoting organization of company to establish cannery.

Va., Amherst.—E. B. Crumacker (care of F. V. Settle, Mgr. Farmers' Warehouse) is reported as contemplating establishment of cannery.

### CLAYWORKING PLANTS

Ark., Mena.—Bricks.—Mena Brick & Clay Co., capital stock \$25,000, incptd. by G. W. Conklin, L. F. Conklin, D. B. Simpson and Edith Simpson.

### COAL MINES AND COKE OVENS

Ky., Burchfield.—Puckett's Creek Coal Co. leased mines of Black Mountain Coal Co.; will make improvements and increase tonnage of mines.

Ky., Harlan.—Harlan Gas Coal Co. organized by W. W. Lewis, J. W. Williams and A. B. Cornett; leased and will develop Harlan Town coal mine.

Ky., Mater.—Southeast Coal Co., Paintsville, Ky., A. D. W. Smith, Prest., and H. La Viers, Mgr., will develop 2000 acres; 2500 tons daily capacity; soon open bids for mining machinery; lately noted (under Ky., Whitesburg) to build coal tipples, miners' houses, etc. (See Machinery Wanted.)

Ky., Middlesboro.—Packets Creek Coal Co., capital \$5000, incptd. by E. D. Howard, U. G. Brummett and John Howard.

W. Va., Delorme, P. O. at Edgerton.—Red Jacket Consolidated Coal & Coke Co., Red Jacket, W. Va., has completed arrangements to improve Grapevine mines at Delorme, increasing monthly tonnage from 12,000 to 20,000.

W. Va., Gilmer.—Katherine Coal Co., capital stock \$20,000, incptd. by J. C. Bolden, R. G. Walsh and B. D. Truslow, all of Charleston, and others.

W. Va., Matewan.—Allburn Coal & Coke Co. will develop 200-acre mining lease; erect tippie costing about \$30,000. (Lately noted.)

W. Va., Summersville.—Gauley Valley Coal & Oil Co., capital stock \$500,000, incptd. by W. C. Reddy of Summersville, J. H. Nash, Jr., J. G. Blinting and C. L. Smith of Charleston and others.

### CONCRETE AND CEMENT PLANTS

Tenn., Kingsport.—Portland Cement.—Clinchfield Portland Cement Co. let contract to Oliver-Hill Construction Co., Maryville, Tenn., to construct \$50,000 building.

### COTTON COMPRESSES AND GINS

Ga., Waycross.—Farmers' Warehouse Co., J. L. Sweet, Prest., proposes to erect lately-noted ginnery during summer; open machinery bids in July; 2 short and 1 long cotton gin, with engine and boiler to be enclosed in building adjoining 40x90-ft. brick cotton warehouse already erected. (See Machinery Wanted.)

Tex., Ballinger.—Texas Compress Co. will rebuild plant reported burned at estimated loss of \$50,000.

### COTTONSEED-OIL MILLS

Ala., Mobile.—Gulfport Oil Mill, Gulfport, Miss., is reported as contemplating erection of refinery.

Ga., Vienna.—Empire Cotton Oil Co. will erect factory building to replace burned structure.

### DRAINAGE SYSTEMS

Fla., Bartow.—Peace Valley Drainage Dist. Comms., R. C. Hutton, Prest., will drain 40,000 acres land; plans provide for construction of 22 mi. main canal 9 ft. deep, with bottom width of 14 to 50 ft. and top width of 25 to 40 ft.; large branch canal known as Gordon ditch, with bottom width of 8 to 20 ft. and

top width of 17 to 29 ft.; 90 mi. additional branches and laterals, about 25 mi. of which will be 8 ft. wide at bottom and 7 ft. deep; about 2,000,000 cu. yds. excavation; estimated cost \$275,000; C. G. Elliott, 700 10th St. N. W., Washington, D. C., is Ch. Engr.; Atlantic Engineering Co., Germania Bank Bldg., Savannah, Ga., made surveys, prepared plans and collected other data for Mr. Elliott. (Lately noted.)

Miss., Chester.—Comms. Big Black Drainage Dist. No. 1 let contract McGinnis & Co. of Memphis, Tenn., at \$68,000 to construct drainage canals; district is 9 mi. long and contains about 10,000 acres bottom land in Choctaw, Webster and Montgomery counties.

Miss., Corinth.—Alcorn County Drainage Comms. let contract to N. C. McGinnis & Co., 1704 Exchange Bldg., Memphis, Tenn., at \$850 to construct Chambers Creek Canal; work includes removal of 100,000 cu. yds. dirt and clearing 68 acres right of way. (Lately noted.)

Mo., Hannibal.—Drainage Comms. let contract W. E. Callahan Construction Co., Omaha, Neb., and T. C. Stevens Co., Des Moines, Iowa, to construct levees and canals costing about \$300,000; reclaim 15,000 acres Mississippi River bottoms between Hannibal and Lagrange.

### ELECTRIC PLANTS

Ark., Gravette.—City Council is considering proposal submitted by M. Bryant of Ashdown, Ark., for purchase of municipal electric-light plant.

Ark., Russellville.—Edward H. Crow of St. Louis, Mo., applied to City Council for 40-year franchise to operate electric-light and power system.

Fla., Pablo Beach.—Town will construct electric-light plant and sewer system; Bond Trustees (Chas. H. Mann and others) invite bids until Feb. 18; lately noted. (See Machinery Wanted.)

Ga., Cordele.—City is considering election to vote on bonds for electric-light plant; J. G. Jones, Mayor.

Ky., Irvine.—City granted franchise to John W. Walker of Corbin, Ky., for electric-light and ice plant.

La., Bastrop.—City voted \$16,000 additional bonds to improve electric-light plant and water-works and \$10,000 refunding bonds. Address The Mayor.

La., Vinton.—Vinton Ice, Light & Water Co., capital stock \$20,000, incptd. by W. C. Reddy of Summersville, J. H. Nash, Jr., J. G. Blinting and C. L. Smith of Charleston and others.

Mo., Deepwater.—City will construct electric-light system; bonds voted. Address The Mayor.

Mo., Hale.—City is having plans prepared for electric-light plant; estimated cost, \$11,000; vote on bonds; Engrs., W. L. Rollins & Co., Midland Bldg., Kansas City, Mo.

Mo., Hume.—Hume Electric Co., J. J. Ross, Mgr., will build lately-noted electric-light plant; cost \$5000; develop 40 H. P.; about 17 mi. transmission line. (See Machinery Wanted.)

Mo., Kennett.—City votes March 2 on ordinance granting franchise Kennett Ice & Electric Co. to construct electric-light and power system.

Mo., Pleasant Hill.—City is not considering construction of electric-light plant; present system is owned and operated by private company. (Recent report incorrect.)

N. C., Wilmington.—City will petition Legislature for authority to vote in May on \$100,000 bonds to construct electric-light plant. F. F. Fillet, City Engr.

N. C., Wilson.—City petitioned Legislature for authority to issue \$80,000 bonds to rebuild electric-light plant; noted in Dec.; T. A. Hinnant, City Clerk. (See Water-works.)

Okla., Bristow.—C. A. West, Mayor, states city will vote Feb. 23 on granting electric franchise to J. C. Vickers and Ora Vaught. Address Bristow Electric Co.

Okla., Pond Creek.—City is considering plans for extension of electric-light plant and water-works; bonds issued. Address The Mayor.

S. C., Walterboro.—Comms. Public Works will construct lately-noted electric plant at cost of \$15,000; plans being prepared by H. S. Jaudon Engineering Co., 408 Southern Bank & Trust Bldg., Savannah, Ga.; develop about

60 K. W.; will receive bids in from 60 to 90 days. (See Machinery Wanted.)

S. C., Winnsboro.—City will improve electric-light plant; let contract. Address The Mayor.

Tenn., Paris.—City will install additional unit of 500 H. P.; erect addition to building; estimated cost \$3000; let contract Louisville Gas & Electric Co. of Louisville, Ky., for equipment.

Va., Buchanan.—Town Council sold franchise Virginia-Western Power Co. of Clifton Forge, Va., to furnish electric-light and power.

Va., South Boston.—Board of Directors voted \$10,000 to improve electric-light plant; John Andrew of Boston, Mass., to be in charge.

W. Va., Parkersburg.—Parkersburg, Marietta & Interurban Ry. Co. will build 5000-kilowatt steam turbine plant; power-house of brick and concrete; Engrs., Sanderson & Porter, New York.

W. Va., Marlinton.—A. E. Huddleston will petition Pocahontas County Commrs. for authority to construct electric-light system from Seebert to turnpike road between Hillsboro and Millpoint and from Hillsboro to Millpoint.

### FLOUR, FEED AND MEAL MILLS

Ga., Dublin.—J. T. Pope will increase daily capacity of flour mill from 60 to 100 bbls.

Ga., Gough.—L. D. Hill will build flour mill; purchased equipment.

Ga., Tennille.—E. F. Smith & Son will install roller flour mill; purchased equipment.

Ga., Waynesboro.—Waynesboro Milling Co., capital stock \$10,000, organized by John L. Boyd, R. C. Neely, J. M. Byne and others; will build mill with daily capacity 50 bbls. flour.

Ga., Waynesboro.—Waynesboro Milling Co., capital stock \$10,000, organized to build mill to manufacture flour, meal and by-products; daily capacity 50 bbls. flour; purchased equipment; F. M. Cotes, Sr., Pres.; J. A. Blount, Secy.-Treas. (Noted in November.)

Ga., Wrens.—Wrens Milling Co. will increase daily capacity of flour mill from 50 to 100 bbls.; purchased equipment.

Mo., Kansas City.—Kelley Mill Co., capital \$500,000, inceptd. by John, Arthur B. and John M. Kelley.

N. C., Asheville.—American Feed Milling Co. (O. P. Lotspeich and others) will build cornmeal plant; daily capacity 50 to 60 bus.; equipment to include corn-shelling machines.

N. C., Shelby.—Blanton Roller Mills (C. C. and Geo. Blanton, owners) will rebuild mill reported burned at loss of \$15,000.

Tenn., Nashville.—American Mills, capital stock \$500, inceptd. by E. M. Kelley, John M. Krelg, John P. Holt and N. B. Lassiter.

Va., Mineral.—Mineral Milling Co. (lately noted inceptd., capital stock \$50,000) will operate mill with daily capacity 25 bbls. flour and 300 bus. meal; J. G. Purcell, Louisa, Va., Pres.; J. E. Fisher, Secy. and Mgr.

### FOUNDRY AND MACHINE PLANTS

Ala., Bessemer.—Iron Pipe.—United States Cast Iron Pipe & Foundry Co., Burlington, N. J., and 1421 Chestnut St., Philadelphia, Pa., will invest \$50,000 to build additional unit to pipe works; steel and concrete construction; increase capacity about 50 per cent. (Lately noted.)

Ky., Paducah.—Textile Machinery.—Southern Textile Machine Co. will enlarge plant.

Md., Baltimore.—Machine Shop.—Autogenous Welding & Equipment Co., 1531 Madison Ave., let contract to H. Momberger, 34 W. Chase St., Baltimore, to erect machine shop at 1217-19 Madison Ave.; 27.6x38.5 ft.; brick; slag roof; cost, without equipment, about \$1800; John Kernan, Archt.

Miss., Columbus.—Culverts.—E. W. Humphries & Co. will establish plant to manufacture culverts.

Miss., Shubuta.—Steam Engines, etc.—J. N. Brownlee, lately noted to build foundry, states buildings are nearly completed and machinery mainly ordered; needs boring mill; will build steam engines and steam specialties; daily capacity 5 to 10 engines. (See Machinery Wanted.)

Mo., St. Joseph.—Machinery.—Colbert Machinery Co., capital \$15,000, inceptd. by J. P. Calvert, R. C. Noler and B. T. Nelson.

### GAS AND OIL ENTERPRISES

La., Shreveport.—Missouri-Kansas Oil Co., capital stock \$100,000, inceptd. by John Weber, M. Zink, T. G. Roberts and others.

N. C., Wilson.—Gas Plant.—City petitioned Legislature for authority to issue \$75,000 for

gas plant; T. A. Hinnant, City Clerk. (See Water-works.)

Okla., Muskogee.—Persian Oil & Gas Co., capital stock \$48,000, inceptd. by Carl Pursel and H. E. Oliver of Muskogee and Geo. McClain of Morris, Okla.

Okla., Oklahoma City.—Corlander Oil Co., capital stock \$15,000, inceptd. by Edgar Turner, G. Burleigh Johnson and John B. Enfield.

Okla., Oklahoma City.—Zelner Oil & Gas Co., capital \$2400, inceptd. by Chas. H. Nicholas, R. A. Lyle and Wilbur A. Doty.

Okla., Tulsa.—Cull Oil Co., capital \$35,000, inceptd. by M. F. Cull and F. C. Cull of Tulsa and M. B. Cull of Pittsburgh, Pa.

Tenn., Cleveland.—Gas Plant.—Chattanooga Gas Co., S. E. De Freese, Mgr., Chattanooga, Tenn., submitted proposition to City Council to build gas plant costing about \$65,000.

Tenn., Cleveland.—Gas Plant.—J. P. Hoskins of Chattanooga submitted proposition to City Council to build gas plant.

Tex., Beaumont.—Oriental Syndicate, capital stock \$7500, inceptd. by C. J. Greene, W. C. Josey and Will L. Barbee.

Tex., Mart.—Gas-pipe Line.—City granted franchise P. B. Crosby to distribute natural gas.

Tex., Sulphur Springs.—Oil Refinery.—Gulf Refining Co. will enlarge storage capacity; erect 3 additional large tanks.

W. Va., Summersville.—Gauley Valley Coal & Oil Co. inceptd. by W. C. Reddy and others. (See Coal Mines and Coke Ovens.)

### ICE AND COLD-STORAGE PLANTS

Fla., Marianna.—Marianna Refrigerating Co., capital stock \$10,000, inceptd. to manufacture ice and operate cold-storage plant; M. R. Burton, Pres.-Treas.; Eugene Rhyne, Sec.

Ga., Moultrie.—Moultrie Packing Co. is reported to increase refrigerating and cooling capacity of packing plant.

Ga., Thomasville.—City Ice Co., capital stock \$25,000, inceptd.; W. E. Beverly, Pres. and Mgr.; acquired equipped plant formerly owned by Mutual Ice & Coal Co.

Ky., Irvine.—City granted franchise to John W. Walker of Corbin, Ky., for ice and electric-light plant.

La., New Orleans.—New Orleans Cold Storage & Warehouse Co., S. J. Drapekin, Mgr., is reinsulating west section of main cold-storage warehouse; has let contract for materials, including 60,000 ft. 3-in. and 25,000 ft. 2-in. cork board and 250,000 ft. timbers and flooring; construction by company's force.

La., Vinton.—Vinton Ice, Light & Water Co., capital stock \$20,000, inceptd.; will build ice factory, electric-light plant and water-works.

Va., Crozet.—Crozet Ice & Cold Storage Co. expects to build cold-storage-plant addition; reinforced concrete or brick construction and either 4 or 5 stories high, with basement, for which must make excavations; capacity 20,000 bbls. apples; will need architect and engineer to draw plans and specifications; will be in market for brick or cement and steel for walls, roofing material, insulation and cooling coils; either let contract or construct under supervising engineer. (See Machinery Wanted.)

### LAND DEVELOPMENTS

Florida.—Florida Colonization Co., authorized capital \$500,000, inceptd. by C. W. Vredenburgh of United Litho. & Engraving Companies, 228 South Ave., Rochester, N. Y.; H. C. Coughlan of New York and J. M. Satterfield of Dover, Del.; plans development large tract tillable land; divide into 5 and 10-acre farms; build 1500 and 2500 dwellings for each farm; expects to develop 5 or more towns and manufacture mission furniture, saw lumber, conduct general store, etc.; will want saws, planers, stickers, drilling machines, ditching machinery, wire fencing, agricultural implements, builders' hardware, etc. (See Machinery Wanted.)

Ky., Morganfield.—Union County Land & Investment Co. inceptd. by Calvin D. Richards, Hira Dean, Jr., and Thomas S. Waller, Jr.

Miss., Gloster.—Mississippi Grazing & Feeding Co., capital \$20,000, inceptd. by David R. Niver, Louis Kahn and others.

Mr., Berlin.—Cross Arrow Orchard Co. inceptd., capital stock \$50,000, by Archie H. Hardesty of Berlin, Alonzo P. Christopher, Hurlock, Md., and Lacey L. Hardesty, Seaford, Del.

Mo., Pevely.—Sylvan Hills Realty Co., capital \$25,000, inceptd. by Nadine A. Juliet W. and Harry C. Dudley.

Tex., San Benito.—Barber Plantation Co. organized with \$50,000 capital stock to grow sugar-cane; later may manufacture sugar.

Va., West Point.—West Point Development Corp., capital \$10,000, chartered; Crosby Thompson, Pres.; C. L. Maskey, Secy.

### LUMBER MANUFACTURING

Ark., Nashville.—Riel-Kadel Lumber Co. increased capital stock from \$30,000 to \$100,000.

Ark., Nashville.—J. H. Allen of Louisiana is reported to install hardwood mill; also to lease and operate Graysonia-Nashville Lumber Co.'s box factory.

Ga., Savannah.—Timber Produce Co., capital stock \$100,000, inceptd. by A. W. Corkins, J. T. McAndrew, W. C. Hager, F. K. Webb and others.

Ky., Harlan.—Pope & Cawood Lumber Co. will build planing mill; install power and woodworking machinery.

Ky., Louisville.—Gernert Bros. Lumber Co. increased capital stock to \$100,000.

Ky., Louisville.—Summers-Johnson Lumber Co. changed name to Johnson Lumber & Supply Co. and increased capital stock from \$10,000 to \$25,000.

Ky., Sergeant.—Archie C. Craft will install sawmill; develop timber boundary at Thornton Creek.

Miss., Clyde.—Lamar Lumber Co., capital \$350,000, inceptd. by G. L. Hawkins, V. M. Scanlan and others.

Miss., Ellisville.—Messrs. Thompson and Dupont of New Orleans are reported to have purchased timber lands and to build mill.

S. C., Tillman.—Jasper Lumber Co., capital stock \$100,000, inceptd. by J. S. Newell and I. E. Richard.

Tex., Houston.—Gulf Coast Lumber Co., capital stock \$10,000, inceptd. by A. S. Vandervoort, L. R. Bryan and C. C. McRae.

W. Va., Bridgeport.—Bridgeport Planing Mill, capital stock \$10,000, inceptd. by Hugh L. Dean, A. D. Fitzhugh, J. L. Lanham and others.

### METAL-WORKING PLANTS

Md., Baltimore.—Tin Cans.—Southern Can Co., Leonard Burbank, Mgr., 717 S. Wolfe St., has plans for extension to plant; brick and concrete; begin construction about 6 mo. hence.

### MINING

Ga., Holly Springs.—Marble.—Green Marble Co., capital stock \$50,000, inceptd. by F. L. DeLay, H. R. DeLay and W. L. Mullins; to quarry marble and stone.

Ky., Middlesboro.—Stone and Lime.—Callison-Price Stone & Lime Co., capital \$15,000, inceptd. by M. S. Callison, R. N. Price and W. R. Pool.

Md., Hancock.—Sand.—Round Top Glass Sand Co., capital stock \$40,000, inceptd. by W. P. Lane, Levin Stonebraker, J. Clarence Lane 2d and Clinton R. Grove; controls 187 acres land about 2½ mi. from Hancock; will develop sand deposit on Tinaloway Ridge; plant to have daily output of 200 tons; manufacture glass, engine, building and concrete sand; mine by hydraulic system; install pump having capacity 500 gals. water per min. at Potomac River and force water to reservoir 150 ft. above sand mine; J. Clarence Lane 2d, Gen. Mgr. and Treas.; main office, Hagerstown.

Mo., Granby.—Zinc and Lead.—Fortune Teller Mining & Milling Co., C. H. Scholes, Mgr., will rebuild lately-noted mill; erect 60x100-ft. mill-construction building; install two 100 H. P. boilers, 65 H. P. engine, compressor, crusher, rolls, 3 jigs, and sludge tables; cost of building and machinery, \$10,000; output, zinc and lead; daily capacity, 10 tons zinc.

Mo., Joplin.—Lead and Zinc.—Olive Cherokee Lead & Zinc Co., capital stock \$50,000, inceptd. by G. W. Short, J. M. Short, R. J. Short and others.

Mo., Joplin.—Lead and Zinc.—Olive Cherokee Lead & Zinc Co., capital stock \$50,000, inceptd. by G. W. Short, J. M. Short, R. J. Short and others.

Mo., Sarcoxie.—Lead and Zinc.—Lower Level Mining Co., capital stock \$2000, inceptd. by J. W. Boyd of Sarcoxie, S. Tamblin of Webb City, H. O. Lowe of Springfield and others.

N. C., Spruce-Mica.—English Mica Co., Williamsport, Pa., is installing dry grinding plant to increase capacity to 50 carloads per annum; operation probably by April 1; manufactures wet ground mica for decorating and dry ground for roofing; machinery purchased.

Okla., Jumbo.—Asphalt.—John D. Townsend, W. Lee Brown and W. T. Gullead, all of Arkadelphia, Ark., plan development 800-acre asphalt property; expect to install mining equipment, etc., costing \$10,000, and

machinery costing \$30,000 to manufacture asphalt roofing, paints, etc. (See Miscellaneous Factories.)

Okla., Miami.—Queen City Mining Co., capital \$10,000, inceptd. by Otis White, John R. Thornburg and L. E. Cartwright.

Tex., Houston.—Rock and Gravel.—Sunrise Rock & Gravel Co., capital stock \$10,000, inceptd. by J. E. Sieber, Harry Hennington and Thos. Pennington.

Va., Chula-Mica.—Virginia Mica & Mining Corp. changed name to Virginia Mica Producing & Mfg. Co. and increased capital stock from \$10,000 to \$300,000.

### MISCELLANEOUS CONSTRUCTION

Ga., Dalton.—Concrete Dam.—Dalton Country Club, H. J. Smith, Pres., will construct concrete dam about 450 ft. long, 4 to 7 ft. high, at Lukens Lake; wants bids on construction; will also enlarge lake from 7 acres to about 20 acres. (See Machinery Wanted.)

La., Harrisonburg.—Dam.—Government let contract Miller Engineering Co., Southern Trust Bldg., Little Rock, Ark., to construct dam No. 2. (Lately noted to cost about \$200,000, of Polce type, about 400 ft. long, 20 ft. high; construction to include lockmaster's dwelling, needle shed, workshop and warehouse; lock is completed; is part of a slack-water improvement of Ouachita River, Arkansas and Louisiana; Engr., Maj. J. R. Slattery, Corp of Engrs., Box 221, Vicksburg, Miss.)

Md., Baltimore.—Swimming Pool.—Public Bath Com., Eugene Levering, Chrmn., will build concrete swimming pool, 600x500 ft. (Lately noted to cost \$30,000.)

Mo., Kansas City.—Flagpole.—Park Commrs. approved plans for erection of flagpole in Swope Park; steel and concrete; about 200 ft. high; estimated cost \$10,000.

Mo., St. Louis.—River-bank Protection.—Government will construct 10,000 lin. ft. river-bank protection; bids until Mch. 10; C. McD. Townsend, Col. Engrs., U. S. Engr. Office, Custom-house. (See Machinery Wanted.)

N. C., Wilmington.—Entrance.—Oakdale Cemetery Co., Wm. E. Springer, Pres., I. O. O. F. Bldg., has plans and specifications by Jas. F. Gause, Jr., for entrance to cemetery; estimated cost \$3000.

N. C., Wilmington.—Breakwater.—War Dept., H. W. Stickle, Maj., Corps of Engrs., U. S. Postoffice Bldg., Wilmington, let contract D. L. Taylor & Co., Medina, N. Y., for breakwater work at Cape Lookout; contract includes building as much of breakwater and shore connection as available and authorized funds (\$1,260,000) will permit. (As lately noted, length to be 7000 ft., deposited in water up to 42 ft. deep; specifications estimating 1,221,700 tons stone for breakwater proper and 3300 tons for shore connection; D. L. Taylor & Co., lowest bidders.)

Tex., Aransas Pass.—Jetty and Dike.—Government will construct jetty and dike; bids until Mar. 16; C. S. Riche, Lieut.-Col. Engrs. (See Machinery Wanted.)

Tex., Houston.—Retaining Wall.—City let contract Chas. S. Basham to construct retaining wall on Louisiana St. between Texas and Prairie Aves.; \$4600 appropriated; Ben Campbell, Mayor. (Call for bids lately noted.)

Va., Herndon.—Heating System.—Hutchinson Vapor Heating Co., capital stock \$100,000, inceptd.; H. B. Chase, Pres., Washington, D. C.; M. F. Hutchison, Secy., Herndon.

### MISCELLANEOUS ENTERPRISES

Ala., Birmingham.—Cattle.—Alabama Cattle Co., capital stock \$10,000, inceptd.; Wm. S. Moughon, Pres.; Jas. G. McCall, V.-P.; Jas. H. Edmondson, Secy.-Treas.

D. C., Washington.—Publishing.—National Publicity Co., 504 Riggs Bldg., inceptd. with \$1000 capital stock by Geo. J. Drewry, John F. Dobbs and Sidney A. Cook.

Fla., Apalachicola.—Hardware.—Hoppe Hardware Co., capital stock \$6000, inceptd.; Sol Brash, Pres., Jacksonville; Alva Hinckley, Secy.-Treas., Apalachicola.

Fla., Crystal Springs.—Bottling.—E. J. Canan is reported to build plant to bottle mineral water.

Ga., Savannah.—Laundry.—Cooley Laundry Co., capital stock \$5000, inceptd. by Nathan Cooley, Jos. Maril and Nathan Maril; continue established plant.

Ky., Paducah.—Laundry.—City contemplates building steam laundry for use in connection with city hospital; cost \$2000; Geo. C. Wallace is in charge.

La., New Orleans.—Stock Farm.—Black River Stock Farm, capital stock \$200,000, inceptd.; John T. Gibbons, Pres., and John



A. Grehan, Secy.-Treas., both of 231 Poydras St., New Orleans; John B. Fain, V.-P., Jackson, Miss.

Md., Baltimore—Grain Elevator.—Western Maryland R. R., Continental Trust Bldg., let contract to Jas. Stewart & Co., Inc., 30 Church St., New York, to build grain elevator; double building, so that ships can dock between and load from either or both; 72x62 ft. and 128x185 ft.; 190 ft. high; 7 stories; reinforced concrete construction; slag roofing; cost, without mechanical equipment, about \$50,000; Engr., Tois Engineering Co., St. Paul, Minn. (Other details lately noted.)

Md., Sparrows Point—Marine Ways.—Maryland Steel Co. let contract to Raymond Concrete Pile Co., New York, through Baltimore (Md.) office, Kenneth Kirwan, Mgr., 425 Munsey Bldg., to erect marine launching ways; concrete bulkhead; timber runway; 600x50 ft.; cost \$50,000.

Mo., St. Louis—Printing.—San-Del Printing Co., capital stock \$4000, incptd. by A. F. Delporte, S. Dallmeier and Chas. Sanftleben.

N. C., Greensboro—Dairy.—Proximity Mfg. Co. contemplates establishing dairy to supply 3 mill villages of Proximity, Revolution and White Oak; erect barns and other buildings; W. B. Thacker of High Point to be manager.

Okla., Muskogee—Poultry.—H. B. Egan Poultry Co., capital \$5000, incptd. by H. B. Egan, A. C. Egan and J. C. Neff.

Okla., Sallisaw—Grain Elevator.—Farmers' Grain & Feed Co. will build lately-noted grain elevator; L. C. McNabb, Pres.; A. G. Arnold, V.-P.; C. M. Gay, Secy.-Treas.; Jno. Romans, Mgr.; let contract to Jno. Romans to erect 20x24x30-ft. mill-construction building with warehouses and granaries; plans prepared and equipment purchased.

S. C., Abbeville—Grain Elevator.—Lately-noted report of construction of grain elevator is incorrect.

Tex., Fort Worth—Building.—Yorty-Kelsay Building Co. incptd. by H. H. Yorty, R. E. Kelsay and Geo. H. Yorty; to conduct general building business.

Tex., Houston—Printing.—Chemical Printing Co., capital stock \$5000, incptd. by E. C. Brock, Carl Clark and G. E. Voebel.

Tex., Lufkin—Printing.—Watford Printing Co. changed name to Watford-Binion Printing Co. and increased capital stock from \$6000 to \$8000.

Tex., Sutherland Springs—Mineral Water. Dove Mineral Water Co., capital stock \$2000, incptd. by M. F. Greiner, C. E. Ford and G. B. Everts, Sr.

W. Va., Wheeling—Dairy.—Wheeling Co-operative Dairy Co., capital \$25,000, incptd. by Albert Ames, H. N. Prazer, S. A. Morris and others.

### MISCELLANEOUS FACTORIES

Ala., Gadsden—Bottling.—Chero-Cola Co. of Atlanta, Ga., leased 2-story brick building at Locust and 5th Sts.; will equip as bottling plant; purchased machinery. (Lately noted.)

Fla., Miami—Awnings.—E. T. Thomas, Box 549, contemplates manufacturing and dealing in awnings. (See Machinery Wanted.)

Fla., Tampa—Automobile Indicators.—Fleccio Automobile Sign & Indicator Co. (V. Fleccio and others) will establish plant to manufacture patented automobile indicator.

Ga., Atlanta—Fire Boxes.—Nichols Fire Box Superheater Co., capital stock \$50,000, incptd. by J. S. Nichols, H. W. Reese, W. J. Stoy and others; to manufacture superheated fire boxes for locomotive engines, stationary engines, stoves, etc.

Ga., Savannah—Stepladder.—J. N. Hamilton, 601 Chamber of Commerce Bldg., Atlanta, Ga., contemplates producing patented platform stepladder for use of mechanics (including carpenters, electricians and others) in construction of buildings; wants to correspond with manufacturers. (See Machinery Wanted.)

Ga., Thomasville—Ice Cream.—Flowers Ice Cream Co. incptd. by W. H. Flowers and J. H. Flowers, Jr.

Ga., Thomasville—Rice Mill.—W. H. Burch & Son, Smith Ave., ask price on rice mills; lately noted to install rice-cleaning mill. (See Machinery Wanted.)

Ga., Waycross—Paint, etc.—Myers Paint Co., capital stock \$5000, incptd. by J. D. Vaugen and J. T. Myers of Waycross and J. F. Bush of St. Louis, Mo.

Ky., Covington—Cigars.—Majestic Cigar Co., capital \$5000, incptd. by Charles Straus, Isadore Straus and Max Wolf.

Ky., Columbia—Columbia Mfg. Co., capital \$25,000, incptd. by Brent Spence, Aaron Mc-

Neill, Robert Thompson and J. Marshall Crowe.

Ky., Hopkinsville—Cereal.—Southern Cereal Co., 25 Cherokee Bldg., organized; Thos. P. Cook, Pres.; T. L. Evans, V.-P.; H. R. Tutt, Secy.-Treas.; Otis P. Tutt, Mgr.; will open bids April 1 to erect 40x70-ft. building; mill construction; cost about \$6000; has let machinery contract, cost about \$10,000; daily capacity 120 bbls. breakfast food.

Ky., Louisville—Films.—Kentucky Film Corp., capital stock \$25,000, incptd.; Elizabeth Schaeffer, Pres.; Emma Meffert, V.-P.; Otto Schaefer, Secy.-Treas.

Ky., Louisville—Stokes Mfg. Co., capital \$5000, incptd. by Jos. H. Beckler, Thomas L. Eastin and John P. Davis.

Ky., Louisville—Mill Supplies.—Pyne Mill & Supply Co. will erect concrete shop at 927 Rupp St.; cost \$3400.

La., New Orleans—Bakery.—N. O. Nelson is reported as contemplating erection of bakery to have daily capacity 20,000 to 25,000 loaves bread.

Md., Baltimore—Gas Appliances.—Baltimore Gas Appliance & Mfg. Co., Bayard and Hamburg Sts., increased capital from \$300,000 to \$500,000.

Md., Cumberland—Pipe Organs.—H. A. Burke Co., Box 9 (lately noted organized, capital stock \$5000), elected Isaac Hirsch, Pres.; Herman Billmeyer, V.-P.; Philip W. Blake, Secy.-Treas.; Henry A. Burke, Mgr.; manufacture high-grade pipe organs; install woodworking machinery for pipe-organ parts—cabinets, etc. (See Machinery Wanted.)

Mo., St. Louis—Bakery.—Puritan Baking Co., capital stock \$25,000, incptd. by Clarence H. Urquhart, Wm. L. Punskey and Gertrude Punskey.

Mo., St. Louis—Schlueter Mfg. Co., capital stock \$175,000, incptd. by Julius A. Schlueter, Walter H. Schlueter, Albert J. Schlueter and others.

Mo., St. Louis—Paint.—Eberson-Lindsley Paint Co., capital stock \$50,000, incptd. by Geo. A. Meyer, J. M. Lindsley, H. P. Fritzsche and others.

Mo., St. Louis—Rubber Goods.—Pelican Rubber Co., capital stock \$5000, incptd. by Frank W. Sanner, Edward C. Sanner and Mary A. Sanner.

N. C., Andrews—Tannic Acid.—Graham County Lumber Co. will manufacture tannic acids from sawdust and other waste of woodworking plant. (See Woodworking Plants.)

Okla., Jumbo—Asphalt Products.—John D. Townsend, W. Lee Brown and W. T. Gullledge, all of Arkadelphia, Ark., plan to develop 800-acre asphalt property near Jumbo; expect to install developing and mining equipment costing \$10,000 and machinery costing \$30,000 to manufacture asphalt roofing, paints and varnishes; later contemplate adding equipment to manufacture by-products. (See Mining.)

Okla., Lawton—Medicine.—Comanche Medicine Co., capital stock \$10,000, incptd. by W. H. Graham, W. B. Tate and M. L. Johnson.

Okla., Sapulpa—Mattresses.—A. O. Wilkerson contemplates building mattress factory.

S. C., Anderson—Moving Pictures.—E. I. Fuller and M. E. Allen, Bellevue Hotel Bldg., will establish plant to Manufacture moving pictures.

Tenn., Jackson—Drugs.—Herb Juice Co. increased capital stock from \$25,000 to \$75,000.

Tenn., Martin—Creamery.—Weakley County Creamery Co., G. S. Knox, Pres., and E. D. Woodburn, V.-P., will establish lately-noted creamery; let contract to erect \$2000 ordinary construction building; open machinery proposals Mar. 1. (See Machinery Wanted.)

Tenn., Nashville—Clothing, etc.—Nashville Mfg. Co., 313 Union St. (lately noted incptd., capital \$10,000) organized; Jos. B. Wilson, Pres. and Gen. Mgr.; Henry C. Williams, Secy.-Treas.; Chas. D. Johns, Mgr.; will manufacture clothing and household specialties, also rubber straw-hat protector.

Tenn., Shelbyville—Overalls and Trousers. J. O. Fly of Clarksville will establish overall and trousers factory; electric power; has building and is installing machinery.

Tenn., Vestal, R. F. D. from Knoxville—Marble.—Fred Andes of Milwaukee, Wis., is reported to have purchased 20 to 25 acres land near Vestal and to build marble mill.

Tex., Fort Worth—Saddlery.—Texas Saddlery Co., capital stock \$120,000, incptd. by J. G. Wilkinson, H. F. Speer and R. P. Wolford.

Tex., Houston—Monarch Milling Co., McKinney and Milby Sts., will rebuild plant reported burned at estimated loss of \$10,000.

Tex., Brenham—Mattresses.—Albert Felscher will rebuild mattress factory burned at estimated loss of \$2500.

Tex., Bryan—Creamery.—Bryan Creamery Co. is reported to build creamery; brick; concrete foundations.

Tex., Houston—Ice-Cream.—W. H. Irvin Ice-Cream Co. let contract G. H. Hartman Contracting Co. to erect lately-noted 2-story 46x100-ft. reinforced concrete fireproof ice-cream factory building; plans by Jones & Tabor, 506 Binz Bldg., Houston; machinery not yet purchased. (See Machinery Wanted.)

Tex., Palestine—Creamery.—Palestine Creamery Co. is having plans prepared for rebuilding creamery lately noted burned at estimated loss of \$6000 to \$8000.

Tex., Wichita Falls—Window Glass.—Wichita Falls Window Glass Co. increased capital stock from \$100,000 to \$150,000.

Va., Charlottesville—Adding Machines.—Cheap Adding Machine Co. (lately noted incptd., capital stock \$100,000) organized; Thos. S. Keller, Pres.; J. A. Cheap, V.-P. and Gen. Mgr.; E. W. Hardesty, Secy.-Treas.; will manufacture inexpensive adding machine.

Va., Newport News—Tools.—International Tool Co., Detroit, Mich., is considering establishment of plant.

Va., Portsmouth—Pulp and Paper.—Oliver Pulp & Paper Co., Wm. Oliver, Pres., leased Southern Fiber Co.'s paper mill and will continue to manufacture No. 1 and No. 2 kraft paper; Southern company has rebuilt its mills, improvements including remodeling of digesters for kraft, installation of chip conveyors, remodeling of beating engines and paper machine, etc. (Oliver Pulp & Paper Co. lately noted incptd. with \$80,000 capital stock.)

Va., Roanoke—Candy.—Colonial Mfg. Co., capital stock \$10,000, incptd.; Alex. Lackey, Pres.; Willis Webb, Secy.-Treas.

Va., Richmond—Sugar and Molasses.—West India Sugar & Molasses Corp., capital stock \$800,000, chartered; Pres., J. F. Harper, Cleveland, O.; Secy., Irving B. Delcher (of Irving B. Delcher & Co.), 1231 Munsey Bldg., Baltimore, Md.

Va., Staunton—Cleaning and Polishing Machine.—Robby Cleaning & Polishing Machine Corp. will manufacture cleaning and polishing machine for cleaning windows and railroad cars, and dressing and polishing floors, furniture, brass, etc.; contemplates placing order for manufacture; J. A. Bell, Pres.; I. K. Roby, V.-P. and Gen. Mgr.; W. A. Bell, Secy.-Treas. (See Machinery Wanted.)

W. Va., Kenova—Chemicals.—Pittsburgh (Pa.) capitalists are reported to have secured controlling interest in Basic Products Co. and to increase capacity.

### MOTORS AND GARAGES

Ga., Atlanta—Automobiles.—Atlanta Auto. Transit Co., capital stock \$10,000, incptd. by J. F. Hazleton, Nelson Schlippey and C. B. Linden.

Ga., Augusta—Automobiles.—Independent Motor Co., capital stock \$2000, incptd. by Henry Proutant, W. R. Eve and A. Bernard Proutant.

Ky., Fort Thomas—Garage.—Highland Auto Garage Co., capital \$10,000, incptd. by C. W. Evans, F. B. Stegeman, Robson S. Moore and H. L. Jeffrey.

Ky., Lexington—Automobile Line.—City Motor Bus Co., authorized capital stock \$100,000, incorporated.

Ky., Louisville—Automobile Line.—Jitney Service Co. of Kentucky, capital \$3500, incptd. by R. M. Cunningham, F. A. Jack and Clinton W. Koerner.

Ky., Louisville—Automobile Transportation.—Banner Transportation Co., capital \$8000, incptd. by J. L. Marshall, J. D. Marshall and W. T. Lewis.

Md., Baltimore—Garage.—Walter Scott, 1127 W. North Ave., is reported having plans prepared for garage on St. Paul St. near Mt. Royal Ave.; 60x120 ft.; 3 stories; brick and stone; cost about \$30,000.

Md., Salisbury—Automobile Line.—Peninsula Rapid Transit Co. organized to operate system of automobiles on lower Eastern Shore; issue \$77,070 stock.

Miss., Jackson—Automobile Line.—Jackson Jitney Car Co., capital \$2000, incptd. by A. C. Smith, L. C. Reuning, Sam J. Myers and W. G. Johnson.

Mo., Kansas City—Automobile Line.—Kansas City Motor Bus & Transportation Co., capital \$2000, incptd. by Earl C. Belg, J. A. Daniels and S. Percy Daniels.

Mo., St. Louis—Garage.—Fredonia Realty Co., Geo. T. Burdeau, Pres., will erect automobile bldg.; 60x115 ft.; 1 story; brick; cost about \$30,000; leased to Electric Garage & Service Co., 5187 Delmar Blvd.

N. C., Charlotte—Automobiles.—Ford Motor Co., Detroit, Mich., is reported to establish

automobile distributing plant to cost about \$200,000; annual output of about 10,000 cars.

Okla., Tulsa—Garage.—Dr. Albert Cook is reported to build garage, 72x140 ft.; to be occupied by Ross & Gries and Nicodemus & Lawson.

W. Va., Moundsville—Garage.—Mound City Automobile Co. (Dennis Williams and others) let contract Jas. R. Baker & Bro. to erect garage at Tomlinson Ave. and 7th St.; brick; 40x100 ft. (Lately noted.)

W. Va., Wheeling—Automobile Line.—Jitney Transportation Co., capital \$5000, incptd. by Jos. Weiskircher, Chas. Weiskircher and E. Weiskircher.

### RAILWAY SHOPS, TERMINALS, ROUNDHOUSES, ETC.

Fla., Tampa—Seaboard Air Line Ry., W. D. Faucette, Ch. Engr., Norfolk, Va., is reported to enlarge shops for repairing locomotives.

### ROAD AND STREET WORK

Ala., Abbeville—Henry County Commrs. let contract Whitley Bros. of Dothan to construct road from Houston county line through Headland and Newville to Abbeville, including 4 steel bridges set in concrete; also let contract J. G. Brown of Montgomery to build road from Abbeville north to Barbour county line; road to be 30 ft. wide of sand-clay type of construction.

Ark., Wynne—Cross county voted \$100,000 bonds for road construction. Address County Commissioners.

Fla., Brooksville—Hernando county will receive bids March 6 to construct hard-surfaced highways; contractors to supply material and labor; Jaudon Engineering Co., Engr., Savannah, Ga.; H. D. Evans, Chmn. County Commrs.; issue \$250,000 funding and highway bonds. (See Machinery Wanted.)

Fla., Clearwater—City, John R. Jeffords, Mayor, postponed date (lately noted for Feb. 17) of receiving bids to construct paving; new date not announced.

Fla., Green Cove Springs—Clay County Commrs. will construct road from Duval county line to Putnam county line, passing through Orange Park, Green Cove Springs and intermediate points; let contract J. B. McCrary Co. of Atlanta, Ga.

Fla., Miami—City will construct sidewalks and curbs; W. B. Moore, City Clerk, invites bids until Feb. 18. (See Machinery Wanted.)

Fla., Orlando—Orange County Commrs. lately had contracts signed with Southern Paving Construction Co., Chattanooga, Tenn., to construct 3 vitrified brick roads radiating north, east and west from Orlando, distance of 28 mi.; paving brick (about 1200 carloads required) supplied by Southern Clay Mfg. Co., from Robbins (Tenn.) and Coaldale (Ala.) plants; work commenced and to be completed in 7 months; G. R. Ramsey, Consult. Engr., Orlando, supervises for county; bond issue for \$600,000, etc., previously noted.

Fla., Palmetto—City contemplates expending about \$100,000 on about 4 mi. of streets and extension of sewer, storm sewer and water systems; no definite plans; T. S. Polard, City Clerk. (Lately noted.)

Fla., Tampa—City will grade, curb and pave Jefferson St. from Ross to Michigan Ave., width 30 ft., 4250 sq. yds. paving and 2500 lin. ft. curbing; Jefferson St. from Michigan to Florabaska Ave., width 26 ft., 4100 sq. yds. paving and 2800 lin. ft. curbing; also number of alleys totaling 1250 sq. yds. paving and 2244 lin. ft. curbing; Commrs. of Public Works, D. B. McKay, Chmn., receives bids until Feb. 16. (See Machinery Wanted.)

Fla., West Palm Beach—Palm Beach county votes March 23 on \$800,000 bonds to construct roads and bridges. Address County Commissioners.

Ky., Grayson—Carter county will again vote on bonds for road construction; K. M. Bagby, Secy. County Commrs., states that on account legal technicality new election is necessary and will be held April 17. The canceled vote was for \$150,000 bonds.)

Ky., Pineville—Bell county voted \$250,000 bonds to construct roads and bridges; W. C. Bingham, Clerk. (Lately noted.)

La., Baton Rouge.—Commission Council will soon invite bids for paving authorized in bond issue; pave about 16 mi. streets at estimated cost of \$350,000.

La., Colfax.—Grant parish voted tax to construct roads; J. E. Kent and V. P. Tullos, Road Commissioners.

La., De Quincy—City let contract to pave sidewalks. Address The Mayor.

La., Oakdale—City will construct concrete sidewalks on Sixth Ave. and 10th St.; let



contract Hudson Construction Co. of Alexandria.

La., Shreveport.—City will pave Howell St. from Louisiana to Christian St., Christian St. to Fairfield Ave., and Fairfield Ave. to Park Pl.; estimated cost \$20,000. Address The Mayor.

Md., Baltimore.—City will construct cement footway around city property; Group No. 1, 15,000 sq. ft.; Group No. 2, 12,000 sq. ft.; Group No. 3, 20,000 sq. ft.; Group No. 4, 17,000 sq. ft.; bids until Mch. 3; H. K. McCay, City Engr. (See Machinery Wanted.)

Md., Baltimore.—Board of Awards let contract Howard O. Flor, 1707 W. Pratt St., at \$1890 to grade Woodberry Ave. from railroad to Hooper Ave.

Md., Baltimore.—Board of Awards let contract to American Paving & Contracting Co., Montebello Ave. and Jenkins La., to pave Baltimore St. from Fallway to Broadway, Patterson Park Ave. from Eastern Ave. to Pratt St. and Eastern Ave. from Ellwood Ave. to eastern city limits; all with sheet asphalt; contracts 107 and 109; amount \$86,139.90.

Md., Baltimore.—City let contract Consolidated Engineering Co., 243 Calvert Bldg., at \$196,588 to grade and pave with granite blocks on concrete base second section of Key Highway; 3300 lin. ft.; R. Keith Compton, Chrmn. Paving Com. (Call for bids lately noted.)

Md., Baltimore.—Board of Awards let contract Slack & Slack Co., York Rd. and 26th St., at \$17,600.50 to pave with granite blocks Lombard St. from Hopkins Pl. to Paca St.; also to pave with vitrified brick following streets and alleys in Northeast Baltimore: Nursery La., Biddle to Preston St.; Sapp St., Madison St. to Ashland Ave.; Spring St., Lexington to Orleans St.; Spring St., Jefferson to McElderry; Dallas St. from Fayette to Orleans, from McElderry to Monument and from Madison St. to Ashland Ave. (Call for bids lately noted.)

Miss., Hazlehurst.—Copiah county, Georgetown Dist., voted bonds to construct roads. Address County Commrs.

Miss., Tupelo.—City will macadamize Broadway, Franklin, Church and Madison Sts.; work by city force; bonds voted. Address The Mayor.

Mo., Joplin.—City will construct Class B concrete curb and gutter on both sides Joplin St. from C St. to north line North Heights Addition, except where curb and gutter is already placed or permits granted; also grade, subgrade, place Class B concrete curb and gutter, and pave, at grade, with Class F macadam, roadway of 13th St. from Joplin to Wall St.; total estimated cost \$1047.21; J. B. Hodgdon, Commr. of Streets and Public Property. (See Machinery Wanted.)

N. C., Raleigh.—City Commrs. are considering issuance of \$50,000 additional bonds to pave streets; O. G. King, Commr.

N. C., Smithfield.—Johnston county, Ingram Township, let contract Hening & Hagedorn, Walnut Cove, N. C., to construct roads; cost \$40,000. (Lately noted.)

N. C., Wilson.—City petitioned Legislature for authority to issue \$80,000 bonds for street improvements; noted in Dec.; T. A. Hinant, City Clerk. (See Water-works.)

N. C., Yadkinville.—Yadkin county votes Mch 25 on \$200,000 bonds to improve roads, bridges, etc. Address County Commrs. (Lately noted.)

Okla., Cushing.—City, C. E. Droege, Mayor, lately noted to pave 11 blocks in business district, will construct 30,000 sq. yds. paving.

Okla., Tulsa.—City will construct concrete sidewalks; E. B. Cline, City Auditor, receives bids until Feb. 25. (See Machinery Wanted.)

Okla., Tulsa.—City will pave sections of Cincinnati Ave., Roosevelt St., 13th St., 14th St., etc.; City Commrs. invite bids until Feb. 23; E. B. Cline, City Auditor. (See Machinery Wanted.)

S. C., Union.—Union county votes Apr. 6 on \$200,000 bonds to construct roads. Address County Commrs.

Tenn., Bryan.—City will soon let contract to pave streets; issued \$12,000 bonds; W. W. Harris, Mayor.

Tenn., Corsicana.—City contemplates voting \$100,000 street, sewer and school bonds. Address The Mayor.

Tenn., Dover.—Stewart county defeated \$100,000 bonds to construct roads. (Lately noted.)

Tenn., Knoxville.—Knox County Court will be petitioned to authorize \$500,000 bond issue to construct 110 to 130 mi. roads.

Tenn., Knoxville.—Knox county secured right-of-way deeds for road 1½ mi. long from Bell's Bridge to Anderson county line; road to be graded 24 ft. wide and macadamized 16 ft.; John Douglass, Supt. of Roads.

Tenn., Maryville.—Blount county voted \$300,000 bonds to grade and macadamize roads. Address County Commrs. (Lately noted.)

Tenn., Memphis.—City is having plans prepared by J. H. Weatherford, City Engr., to widen and improve McLemore Ave. from Rayburn Blvd. to Main St.; will petition Legislature to instruct Illinois Central R. R. (A. S. Baldwin, Ch. Engr., Chicago, Ill.) and Yazoo & Mississippi Valley R. R. (A. H. Egan, Gen. Supt., Memphis) to construct viaduct across tracks; city expects to expend \$100,000 as its share of cost.

Tenn., Austin.—City will construct oiled gravel road to dam. M. C. Welborn, City Engr.

Tenn., Franklin.—Robertson County Road Dist. No. 5 will construct system of roads and bridges; Road Commrs., S. M. Peters, Secy., Bremond, Tex., invites bids until Mch. 5; contract includes grading and constructing about 50 mi. earth, sand-clay and gravel roads and all necessary bridges and culverts. (See Machinery Wanted.)

Tenn., Houston.—City will grade and pave Chenevert St. from McKinney to Leeland Ave. with sheet asphalt, asphaltic concrete, bitulithic, vertical fiber brick (cement filler) or Uvalde rock asphalt; bids at office City Secy. until Feb. 20; Ben Campbell, Mayor. (See Machinery Wanted.)

Tenn., Houston.—City will grade and pave approach to bridge on Capitol Ave.; 2½-in. sheet asphalt, 2½-in. asphaltic concrete; 2½-in. bitulithic, 3-in. wood block, 3½-in. wood block, standard brick, vertical fiber brick (asphalt filler) or 2½-in. Uvalde rock; bids at office City Secy. until Feb. 22; Ben Campbell, Mayor. (See Machinery Wanted.)

Tenn., Houston.—City will grade and pave Louisiana St. from Texas to Prairie Ave. with 3-in. bitulithic, 3½-in. wooden blocks, standard brick, vertical fiber brick (cement filler), vertical fiber brick (asphalt filler) or 3-in. Uvalde rock; bids received at office City Secy. until Feb. 20; E. E. Sands, City Engr.; Ben Campbell, Mayor. (See Machinery Wanted.)

Tenn., Karnes County.—Karnes County Precinct No. 1 (embracing Karnes City and Kenedy) contemplates voting on \$200,000 bonds to construct roads. Address County Commrs.

Tenn., Kountze.—Hardin County Road Dist. No. 1 votes Feb. 20 on \$150,000 bonds to construct roads. Address County Commrs.

Tenn., McKinney.—City let contract Kaw Paving Co., Kansas City, Mo., for 25,000 sq. yds. paving; 2-in. Texaco asphaltic concrete, 5-in. base; Chas. Schultz, City Engr. (Bids lately noted.)

Tenn., Palo Pinto.—Palo Pinto County Commissioners let contract Clynes & Duncan of Newark, N. J., at \$96,600 to improve roads in Dist. No. 1, aggregating 36.7 mi., on 9 roads; concrete bridges and culverts in connection; Engr., Jas. C. Travilla, Mineral Wells; J. W. Brock, County Clerk. (Call for bids lately noted.)

Tenn., Port Lavaca.—Calhoun County Seadrift Road Dist. will vote on \$60,000 bonds to complete Seadrift and Port O'Connor Rd. Address County Commissioners.

Tenn., San Benito.—City postponed election on bonds until Mch. 2. (Lately noted to vote Feb. 2 on \$3000 bonds to improve streets.)

Tenn., San Marcos.—Hays County Commrs. let contract A. M. Clopton at \$527 to construct 6½ mi. of Nacogdoches Rd.

Tenn., Taylor.—City contemplates voting on \$100,000 bonds to pave streets. Address City Commrs.

Tenn., Victoria.—City votes Mch. 23 on \$30,000 bonds to improve streets. Address The Mayor. (Lately noted.)

Va., Gate City.—Scott county, Taylor Dist., votes Mch. 9 on \$65,000 bonds to construct roads. Address County Commrs.

Va., Richmond.—Henrico county will improve following roads: Grading, drainage and gravel surface on Nine-Mile Rd., between city limits and Stop 19, 2.3 mi.; grading, drainage and gravel surface on Williamsburg Rd., between city limits and Seven Pines, 5 mi.; grading, drainage and waterbound macadam surface, with surface treatment, Osbourne Turnpike, between city limits and Sullivan's Store, 1.69 mi.; alternate bids on bituminous macadam surface and bituminous concrete surface on Cary St. road between city limits and Country Club, 1.61 mi.; G. P. Coleman, State Highway Commr., and Hen-

rico County Supvrs. invite bids until March 1. (See Machinery Wanted.)

W. Va., Welch.—McDowell County Big Creek Magisterial Dist. votes Mch. 20 on \$165,000 bonds to construct roads. Address County Commrs.

## SEWER CONSTRUCTION

Ark., Leslie.—City Council voted to issue bonds to construct sewer system and water-works; let contract J. B. McCrary Co. of Atlanta, Ga., to make preliminary cost estimate.

Ark., Little Rock.—Comms. Sewer Dist. No. 69 let contract M. D. L. Cook of Little Rock to construct sewers in annex to district comprising about 25 blocks; issued \$10,500 bonds.

Fla., Pablo Beach.—Town will construct sewer system and electric-light plant; Bond Trustees (Chas. H. Mann and others) invite bids until Feb. 15; lately noted. (See Machinery Wanted.)

Fla., Palmetto.—City, T. S. Pollard, Clerk, contemplates extension of sewers and storm sewers. (See Road and Street Work.)

Ga., Atlanta.—City let contract Case & Cothran, 1507 Candler Bldg., Atlanta, to construct concrete sewer in connection with extension of Spring St. to Peachtree St. near Brookwood.

Ga., Decatur.—City votes Mch. 20 on \$18,000 bonds to extend sewer system; F. T. Hopkins, Mayor.

Ga., East Lake, P. O. at Atlanta.—Town contemplates voting on bonds for sewers, etc. Address Town Clerk. (See Water-works.)

Mo., Caruthersville.—City voted \$32,000 bonds to extend sewer system; will soon invite bids; Consult. Engr., Frank L. Wilcox, Syndicate Bldg., St. Louis. (Lately noted.)

Mo., Springfield.—City let contract John Spandil, 520½ E. Commercial St., at \$11,400 and O. H. McMurray, Meadowmore Pl., Springfield, at \$8006 to construct sewers in Dists. 35 and 30, respectively, of Section No. 2.

N. C., Rowland.—City will issue \$10,000 additional bonds to complete sewer system. Address The Mayor.

Okla., McAlester.—City will construct vitrified pipe sewers on S. 10th St. and in Dists. Nos. 37, 40 and 43; 5061.7 ft.; contracts A, B, C and D; bids until Feb. 19; J. M. Gannaway, City Clerk. (See Machinery Wanted.)

S. C., Walterboro.—Comms. Public Works will expend \$13,000 on lately-noted sewer construction; open bids in from 60 to 90 days; H. S. Jaudon Engineering Co., Engr., 408 Southern Bank & Trust Bldg., Savannah, Ga. (See Machinery Wanted.)

S. C., Woodruff.—City engaged J. B. McCrary Co. of Atlanta, Ga., to make surveys for sewer system. (Reported in July to have voted \$23,000 bonds.)

Tenn., Sewanee.—University of the South contemplates constructing sewer system; engaged Hunter McDonald (Ch. Engr., Nashville, Chattanooga & St. Louis Ry.), Nashville, as engineer.

Tenn., Corsicana.—City contemplates voting on \$100,000 sewer, street and school bonds. Address The Mayor.

Tenn., Electra.—City is reported as contemplating construction of sewer system. Address The Mayor.

Tenn., Pecos.—City let contract Lon P. Smart of Pecos to construct disposal plant for municipal sewer system.

Va., Hampton.—City has report submitted by Geo. W. Fuller, Engr., Syracuse, N. Y., estimating cost of building sewer system sufficient to prevent pollution of Hampton Creek at \$72,025 and recommending constructing of sewer outlet into Back River; Girard Chambers, City Engr.

## TELEPHONE SYSTEMS

Ark., Lewisville.—Waldo Telephone Co., capital stock \$7500, inctpd.; N. D. Howell, Pres.; M. D. Clark, V.-P.; G. M. McKnight, Secy.-Treas.

Fla., Jacksonville.—Postal Telegraph Cable Co. (New York office, 253 Broadway) will construct another line between Jacksonville and Tampa via Baldwin, Starke, Gainesville and Ocala; B. S. Price, Supt. of Construction; Geo. W. Ribble, Dist. Supt., both of Atlanta, Ga.

Ga., Athens.—Southern Bell Telephone & Telegraph Co. (main office, Atlanta, Ga.) will build exchange; 3 stories; brick, stone and iron.

Ky., King.—Farmers' Home Telephone Co. inctpd. by James Golden, Oscar Foley and J. A. Legler.

Ky., Mannsville.—Mannsville Telephone Co. changed name to Taylor County Telephone Co. and increased capital from \$2500 to \$10,000.

Okla., Noble.—Denver-Noble Telephone Co., capital stock \$1000, inctpd. by Mrs. L. B. Essary, John Moten and G. C. Fishburn of Norman, R. F. D. No. 5.

Tenn., Soddy.—Soddy Telephone Co. organized with Jas. A. Roberts, Pres.; T. J. Welch, V.-P.; W. H. Crow, Secy.-Treas.; proposes to install telephone exchange with rural connections.

Tenn., Bridgeport.—Bridgeport Independent Telephone Co., capital stock \$3500, inctpd. by W. R. Longley, D. F. Reddell and H. E. Giles.

Tenn., Ranger.—Ranger Telephone Co., capital stock \$2700, inctpd. by Dan Waggoner, J. M. Hicks and Houston Brashear.

## TEXTILE MILLS

Ga., Columbus—Hosiery.—Perkins Hosiery Mills will add 8 cards and other machinery; has let contracts; now consolidating steam plants, installing new boilers, constructing chimneys, etc., to effect economies; this steam is for heating, dyeing, finishing, box making, etc.; has purchased Massey Hosiery Mills; both mills operated by hydro-electric power; Perkins Company capital stock will be \$250,000. (Lately noted.)

Ga., Gainesville—Hosiery.—Gainesville Hosiery Mills, Archibald C. Meldrum, Pres., purchased R. E. Green Cotton Mills, equipped with 2680 spindles, and will manufacture its own hosiery yarn; hosiery mills proper will be 150x50 ft., 3 stories; manufacture hosiery for export trade. (Organization of company and other particulars noted in November.)

Ga., Rome—Bleachery.—J. F. Allison, R. L. Critchfield and A. B. David of Calhoun, Ga., will organize company with \$25,000 capital stock to build bleachery; clean cotton linters used in manufacture of absorbents and explosives; use about 40,000 gals. water daily.

Ga., Thomaston—Cotton Cloth.—Thomaston Cotton Mills will invest \$250,000 to build and equip additional mill; plans to construct 400x125-ft. building with capacity 25,000 spindles and 600 looms; first installation 15,000 spindles; J. H. Mayes, Engr., Charlotte, N. C. (Lately incompletely reported.)

N. C., Asheville.—Bed Spreads, etc.—French Broad Mfg. Co. will probably proceed with plan to build spinning mill and reinforced concrete warehouse; mill of standard mill construction, 169 ft. 8 in. by 104 ft.; 2 stories; equip with 500 spindles and accompanying machinery for spinning weaving yarns; warehouse 100x50 ft., 4 stories, reinforced concrete, costing \$15,000; Lockwood, Greene & Co., Boston, Mass., and 1530 Healey Bldg., Atlanta, Ga., Architects-Engrs. in charge. (Lately noted.)

N. C., Cliffside Mills—Cotton Cloth.—Cliffside Mills will, it is reported, build 500-ft. addition for 20,000 spindles and 200 looms.

N. C., Gastonia—Cotton Yarn.—J. H. Seapark is reported as planning to build a 5000-spindle fine yarn mill.

N. C., Albemarle—Cotton Cloth.—Efrid Mfg. Co. is reported as to add looms.

N. C., Gastonia—Cotton Yarn.—Trenton Cotton Mills will build 7000-spindle addition.

N. C., Gastonia—Cotton Yarn.—C. M. Dunn is reported as planning to build 6000-spindle fine yarn mill.

N. C., Winston-Salem—Hosiery.—Shamrock Hosiery Mills Co. has changed name to Hanes Hosiery Mills Co. and increased capital stock from \$100,000 to \$200,000.

Okla., Muskogee—Gloves, etc.—American Glove & Knitting Co. has organized with \$5000 capital stock; W. L. Lindhard, Pres.; T. J. Cory, V.-P.; R. S. Davis, Secy.-Treas.; has 100x50-ft. brick and stone building in which to install machinery. (Lately noted incorporated, etc.)

Va., Fredericksburg—Woolen Goods.—Washington Woolen Mills Co. increased capital stock from \$100,000 to \$150,000.

## WATER-POWER DEVELOPMENTS

N. C., Raleigh.—Yadkin River Power Co. increased capital stock from \$4,000,000 to \$5,000,000; no important extensions now contemplated.

Tenn., Sevierville.—Sevierville Light & Power Co. inctpd. by Stanley McMahon and others; construct power plant, transmission lines, etc.; cost \$6000; use concrete dam of Walker Milling & Produce Co.; 2 mi. transmission; average H. P. about 100; all material purchased; Stanley Kennedy, Engr. and Contr., Sevierville.

Va., Lexington.—Blue Ridge Power Co. plans to construct dam over James River on



old dam site at Balcony Falls; to generate electric power.

### WATER-WORKS

Ala., Notasulga.—City issued bonds and will construct water-works; include 80,000-l.-S.-gal.-capacity tank on tower, 80,000-gal.-capacity surface reservoir, about 3 mi. cast-iron pipe, power-house complete, 500-gal.-per-min. pump, 25 H. P. gas engine and boring deep well; bids until Mch. 2; Edgar B. Kay, Engr., Tuscaloosa, Ala. (See Machinery Wanted.)

Ala., Phenix City.—City is arranging to construct water-works; voted \$15,000 bonds; W. Ross Harrison, Mayor. (Previously noted.)

Ark., Leslie.—City Council voted to issue bonds to construct water-works and sewer system; let contract to J. B. McCrary Co. of Atlanta, Ga., to make preliminary cost estimate.

D. C., Washington.—Government contract (lately noted let to L. B. Jacobs, Newark, Del.) for removing pumping plant at Hospital for Insane includes removal of present steam boiler, air compressors and pumps, and installation of electric-driven air compressors and centrifugal pumps; cost \$15,750.

Fla., Palmetto.—City, T. S. Pollard, Clerk, contemplates water-works construction. (See Road and Street Work.)

Ga., Decatur.—City votes Mch. 20 on \$7000 bonds to extend water-works; F. T. Hopkins, Mayor.

Ga., East Lake, P. O. at Atlanta.—Town contemplates voting on bonds for water-works, sewers and schools. Address Town Clerk.

La., Bastrop.—City voted \$16,000 additional bonds to improve water-works and electric-light plant and \$10,000 refunding bonds. Address The Mayor.

La., Vinton.—Vinton Ice, Light & Water Co., capital stock \$20,000, incptd.; will construct water-works, ice factory and electric-light plant.

Mo., Caruthersville.—City voted \$30,000 bonds to extend and improve water-works; will soon invite bids; Consult. Engr., Frank L. Wilcox, Syndicate Bldg., St. Louis. (Lately noted.)

Mo., Chillicothe.—City voted \$135,000 bonds to purchase and extend water plant; John L. Schmitz, Chmn. Water Com. (Lately noted.)

Mo., Kennett.—City votes Mch. 2 on \$7000 bonds to extend water-works; Clyde Oakes, Mayor.

Mo., Sedalia.—Sedalia Water Co. let contract Pittsburgh Filter Mfg. Co. for 3,000-gal. mechanical filter plant, and to Johnson & Sons, Sedalia, for reinforced concrete covered clear-water reservoir; plans and supervision of work by Chester & Fleming, Engrs., Pittsburgh, Pa.

Mo., St. Louis.—Board of Public Service let contract Jas. Cameron of Pittsburgh, Pa., for turbine engine and centrifugal pump for city water-works; cost about \$42,000.

N. C., Wilmington.—Oakdale Cemetery Co., Wm. E. Springer, Pres., I. O. O. F. Bldg., contemplates constructing water-works.

N. C., Wilson.—City petitioned Legislature for authority to issue \$35,000 bonds for water-works, \$75,000 for gas plant, \$80,000 for re-building electric-light plant, and \$80,000 for street improvements; T. A. Hinnant, City Clerk.

Okla., Cordell.—City let contract to Humrichouse Construction Co. at \$64,150.95 to construct water-works extensions; Benham Engineering Co., 435 American National Bank Bldg., Oklahoma City, Consult. Engr., and will supervise construction.

Okla., Kiefer.—City let contract Southernlin Construction Co. Kansas City, Mo., to construct water-works; \$60,000 available.

Okla., Pond Creek.—City is considering plans for extension of water-works and electric-light plant; bonds issued. Address The Mayor.

S. C., Walterboro.—Comms. Public Works will open bids in from 60 to 90 days for lately-noted water-works construction; cost \$18,000; 2,500,000 gals. pump capacity; 8-in. and 6-in. mains, with valves and hydrants; brick building; 100,000 to 150,000-gal. reinforced concrete reservoir with concrete cover; install 2 fire-service pumping engines and 1 service pump; water to be secured from large flowing artesian well; bids for well to be received within about 30 days; H. S. Jaudon Engineering Co., Engr., 408 Southern Bank & Trust Bldg., Savannah, Ga. (See Machinery Wanted.)

S. C., Winnsboro.—City will construct water-works; let contract. Address The Mayor.

S. C., Woodruff.—City engaged J. B. McCrary Co. of Atlanta Ga., to make surveys for water-works; secure water from deep wells or from Enoree River; cost of laying 8-in. pipe from Main St. to river, about 2 mi., is estimated at \$8000. (Reported in July as having voted \$37,000 bonds.)

Tex., Kerrville.—Kerrville.—Water-Works Co. increased capital stock from \$10,000 to \$40,000.

Tex., San Jose.—San Jose Water Co., capital stock \$2000, incptd. by Louis Seifert, P. Norton Doyle and E. I. Morse.

Tex., Sweetwater.—City let contract John Moore, Abilene, Tex., at \$12,566 to construct 6½ mi. 12-in. cast-iron gravity conduit; M. M. Cooke, Engr., Sweetwater. (Call for bids noted in January.)

W. Va., Shepherdstown.—City granted franchise Randolph Stainaker, W. Howard Hamilton and Rowland C. Ringgold to construct water-works.

### WOODWORKING PLANTS

Ark., Texarkana.—Wagons.—J. F. Rochele will rebuild burned structure on 3d St.; T. W. Hunter will equip as wagon and blacksmith shop.

Ky., Elizabethtown.—Handles and Furniture.—Bond Bros. are considering erection of handle and furniture factory.

Ky., Harlan.—Woodwork.—Pope & Cawood Lumber Co. will install woodworking machinery. (See Lumber Manufacturing.)

Ky., Louisville.—Boxes and Crates.—American Box & Crate Co. (Harrison Bridges and others) will erect frame factory building at 2101 W. Magnolia St.; cost \$15,000; 2-story-and-basement 120x80-ft. structure; ironclad construction; composition roofing; F. H. Miller, 1820 W. Hill St., Contr.; Brinton B. Davis, Archt.; will manufacture wire-bound boxes and crates; contract for heating and piping for shaving fans not yet let.

Ky., Ocala.—Staves.—Valley Creek Lumber Co., Wm. Golding, Mgr., reported as to purchase additional timber boundaries in Letcher county and to install stave mills.

La., Ama.—Cooperage.—Levy & Co. (Harry Levy and Henry Hirsch) will install cooperage plants at Ama and St. Rose, La.; will erect 50x25-ft. buildings.

La., St. Rose.—Cooperage.—Levy & Co. will install cooperage plant; erect 50x25-ft. building. (See La., Ama.)

Miss., Minter City.—Staves.—Cane Lake Stave & Lumber Co., capital \$10,000, incptd. by C. M. Davis, J. J. Jones and others.

N. C., Andrews.—Furniture Stock, etc.—Graham County Lumber Co. will build wood-working plant; purchased 30-acre site; plant will have annual consumption exceeding 10,000,000 ft. chestnut oak and other hardwoods; equipment will include kilns, veneer machinery, electric motors for power, etc.; generate electricity from generators driven by steam made from waste wood; will manufacture tannic acid from sawdust, etc.

N. C., Asheville.—Veneer.—Carolina Veneer Co. will rebuild plant reported burned at estimated loss of \$70,000.

Tenn., Cleveland.—Chairs.—Cleveland Chair Co. (Jack Milne and others) will build plant to cost \$30,000; let contract Tom Banks to erect main building; 2 stories; 65x170 ft.; brick. (Lately noted.)

Tenn., Jackson.—Staves and Heading.—Harlan-Morris Mfg. Co., F. Harlan, Pres., and Mack Morris, Secy., Treas. and Mgr., will establish lately-noted plant; building plans not decided; now receiving bids on machinery for sawmill and for manufacture of tight and slack barrel staves and heading. (See Machinery Wanted.)

Tenn., Watertown.—Locust Insulator Pins. A. T. Williams will install mill to manufacture locust insulator pins.

Tex., Temple.—Sash and Doors.—Temple Sash & Door Co. organized by J. H. Wallraven and J. W. Watson.

Va., Stuart.—Barrels, etc.—J. D. Blackard Stave & Cooperage Co. (lately noted to install equipment) will manufacture fruit barrels and slack barrel staves and bending; mill is constructed; will build (by company's force) 40x60-ft. shop and 60x30-ft. warehouse; cost of machinery about \$1500; annual capacity, about 20,000 barrels and 400,000 slack barrel staves; no further machinery needed at present; officers include M. V. Stedman, Pres.; J. B. Black, V.-P.; W. G. Blackard, Secy.-Treas. and Mgr.

### FIRE DAMAGE

Ala., Clanton.—Thos. A. Curry's building, occupied by Pink Giles; loss \$3000.

Ala., Clio.—Buildings owned by D. G. Adkinson and Short Day; loss \$5000.

Ala., Decatur.—Dr. W. R. Shelton's residence; dwelling owned by Claude Acker, Birmingham.

Ala., Montgomery.—Frank Pruitt and T. W. Smith's stores and dwellings and other buildings.

Ala., Sylacauga.—C. W. Hammett's residence; loss \$3200.

Ark., Algon.—R. L. Stringer's building, occupied by Miss Hardin; loss \$3000.

Ark., Anderson.—H. M. Tatte & Co.'s store; J. F. Barkdale's building; loss \$20,000.

Ark., Little Rock.—H. B. Brown's residence, barn and servants' quarters; loss \$5500.

Ark., Paragould.—Majestic Theater on S. Pruett St., building owned by Baird estate; loss \$3700.

Ark., Washington.—Haygood Seminary's main building and girls' dormitory; estimated loss \$8000.

Fla., Moultrie.—Residence owned by G. E. Wood, St. Augustine, Fla.

Fla., Palmetto.—Manatee Fruit Co.'s citrus fruit packing plant; loss \$50,000.

Ga., Atlanta.—W. A. Niall's residence at 91 N. Moreland Ave.

Ga., Camilla.—Joiner House, conducted by Mrs. A. S. Joiner; loss \$5000.

Ga., East Atlanta, Sta. Atlanta.—Marbut & Minor's store; loss \$12,000 to \$15,000.

Ky., Burnside.—N. P. Bolling's store and residence; V. M. Lester's restaurant; Police Court Bldg and 2 residences.

Ky., Louisville.—W. J. Haag's residence at 507 Camden St.; loss \$3500.

Ky., Louisville.—Mrs. C. H. Kurtzinger's residence in Southern Heights; loss \$3200.

Ky., Murray.—Cary Wicker's bakery.

Ky., Sebree.—B. F. Jewell's store, owned by O. P. Sellers; loss \$3000.

Ky., Sharp, K. F. D. from Benton.—Jordan Rudolph's residence near Sharp; loss \$3000.

La., Forest.—Central Warehouse Co.'s warehouse; loss \$3000.

La., Kinder.—P. Nevill's store, loss \$7000; Walter Pawcett's meat market; Mrs. Jos. Dehon's residence; Jos. Langley's residence.

La., Monroe.—J. L. Kaliski's 3 cottages; loss \$4000.

Md., Annapolis.—Mrs. Jean Cabell O'Neill's residence "The Anchorage."

Md., Hyattsville.—Edward B. Martin's residence in West Riverdale; loss \$4500.

Miss., Moorehead.—W. D. Parker's plantation residence.

Miss., Poplarville.—Poplarville Machine and Boiler Works; estimated loss, \$3000.

Miss., Meridian.—Rex Planing Mill Co.'s main building at 9th Ave. and A St.

Miss., West Point.—Turnspeed Drug Co.'s store, owned by Rev. Roy Chandler; P. H. White Drug Co.'s store, owned by A. A. Beasley; First National Bank; total loss \$40,000.

Mo., Independence.—Feedwell Restaurant; Music Hall Bldg.; DeCoursey Bldg.; Compton Bldg.; Ott Bldg.; Home Telephone Co.'s exchange in Ott Bldg. (loss \$25,000); total loss \$100,000.

## BUILDING NEWS

### BUILDINGS PROPOSED

#### APARTMENT-HOUSES

D. C., Washington.—Mrs. Stanley McCormick is having plans prepared by J. H. de Sibour, Hibbs Bldg., Washington, to erect apartment-house on Massachusetts Ave. near Du Pont Circle; 6 stories; 100x150 ft.; probably slag roof; steam heat; electric lighting; one electric freight and one electric passenger elevator; cost \$450,000; plans ready in spring. (Previously noted.)

D. C., Washington.—Bates Warren, Southern Bldg., is having plans prepared by Hunter & Bell, Southern Bldg., Washington, for apartment-house at Wyoming and Connecticut Aves.; 7 stories, 157x129 ft.; fireproof; electric plant; electric elevators; steam heat; cost about \$300,000; plans ready about March 1. (Hunter & Bell lately noted preparing plans for apartment-house, owner's name withheld.)

Ky., Louisville.—L. Keller & Sons will erect apartment-house on 3d St. between Avery and Brandeis Sts.; 3 stories; 24 suites for 5 to 7 rooms; site 125x200 ft.; red brick; white tile trimmings; cost \$100,000; construction by owners. (Lately noted.)

N. C., Asheville.—Carolina Veneer Co.'s plant; estimated loss \$70,000.

N. C., Beasemer City.—C. W. Fuller's residence; loss \$6000.

S. C., Carlisle.—Parsonage of Methodist church, Rev. Watson B. Duncan, Jr., pastor.

N. C., Shelby.—Blanton Roller Mills, 2 mi. from Shelby, owned by C. C. and Geo. Blanton; loss \$15,000.

N. C., Warsaw.—David Woodard's gin.

N. C., Warsaw.—D. E. Boney's gin.

S. C., Columbia.—J. H. Keisler's 2 frame residences.

S. C., Darlington.—Coggeshall Ginnery; estimated loss \$10,000.

Tenn., Bristol.—James M. Devault's residence on Cherry St.; loss \$4000.

Tenn., Chattanooga.—Dr. N. C. Steele's residence on Missionary Ridge; loss \$10,000.

Tenn., Chattanooga.—Mrs. W. W. McJunkins' residence at 1068 Grand Ave.; loss \$3000.

Tenn., Gallatin.—M. M. Ford's tobacco warehouse on Fletcher farm; loss \$12,000.

Tenn., Grandview.—Grover Hall dormitory of Grandview Normal College; loss \$6000.

Tenn., Tiptonville.—R. S. Parks Stave Co.'s mill; loss \$2500.

Tenn., Wilder.—Benton M. Johnson's store; loss \$6000.

Tex., Abilene.—Emma Jackson's rooming-house; loss \$7000.

Tex., Abilene.—Abilene Gas & Electric Co.'s boiler-room of electric plant; estimated loss \$20,000 to \$25,000; Geo. H. Caffrey, local manager; controlled by American Public Service Co., New York.

Tex., Ballinger.—Texas Compress Co.'s plant; loss on compress \$50,000.

Tex., Brenham.—Albert Felscher's mattress factory; loss \$2500.

Tex., Bryan.—Mrs. V. Ketch's residence.

Tex., Houston.—Monarch Milling Co.'s peanut-products plant at McKinney and Milby Sts.; estimated loss \$10,000.

Tex., Jewett.—Jewett State Bank building; Coakey Evans' store; W. T. Evans & Co.'s store; F. P. Harrison's store and other buildings.

Tex., Scrap.—Red River Gin; loss about \$6000.

Tex., Sweetwater.—J. H. Snem's residence; loss \$5500.

Tex., Waco.—Maennerchor Club; loss \$12,000.

Tex., Wellborn.—Thos. H. Royder's store; loss \$20,000.

Tex., Weatherford.—Building occupied by Reynolds Drug Co. and owned by J. J. Tucker.

Va., Heathsville.—Paul Pusey's carriage factory, automobile repair shop, garage and blacksmith shop.

Va., Portsmouth.—Breslau & Anthony's store at 114 High St.; loss \$20,000.

Va., Richmond.—Cheml Co.'s building at 629 E. Main St., B. R. Benton, Pres.; loss \$41,000.

W. Va., Clarksburg.—Glenview Brick Co.'s plant; loss \$10,000.

Md., Baltimore.—Calvert Court Co., 1008 Garrett Bldg. (not Calvert Construction Co., 663 Calvert Bldg., as lately incorrectly noted), will erect apartment-house at 31st and Calvert Sts.; 4 stories; 172.7x103 ft.; fireproof; terra-cotta, tile and slag roof; steam heat; gas and electric lighting; cost \$90,000; E. H. Glidden, Archt., 1008 Garrett Bldg., Baltimore.

Mo., St. Louis.—Jay C. Higley will erect double 4-room flats.

Mo., St. Louis.—Wm. Happel will erect 2-story tenement-house at 3588 Humphrey St.; cost \$4700; construction by owner.

Mo., St. Louis.—Arthur J. Hess, 3506 Connecticut St., has plans by Hy. Schamburg, 2811 Indiana St., St. Louis, for apartment-house at 3556 Lafayette Ave.; ordinary or mill construction; composition and tile roof; hot-water heat; granitoid sidewalks; contract for rubble work let to C. Rausendorf, St. Louis; construction by owner. (Lately noted.)

Tenn., Chattanooga.—T. P. McMahon will erect apartment-house at 608 McCallie Ave. to replace burned structure.

Tex., Dallas.—Pickney & Campbell will erect apartment-house at Beckley and Jefferson Sts.; 3 stories; 70x156 ft.; semi-fireproof; brick walls, wood floors and white cement stucco front; gas heating; electric wiring; cost \$35,000 without mechanical equipment; day labor; owners will purchase all materials. (Lately noted.)

Tex., Silsbee.—Carr Gibbs will erect building for apartments, etc. (See Theaters.)

Va., Richmond.—J. Lee Davis will erect apartment-house on Stuart Ave.; cost \$20,000; 3 stories; brick.

### ASSOCIATION AND FRATERNAL

Ga., Macon.—Al Sihah Temple of Mystic Shrine plans to erect building to contain auditorium seating 5000.

Tenn., Maryville.—Bank of Blount County is having plans prepared for building to contain Masonic hall, etc. (See Bank and Office.)

### BANK AND OFFICE

Fla., Palm Beach.—W. I. Metcalf will erect office building. (See Government and State.)

Ga., Rome.—H. Colvin Linthicum, Durham, N. C., is reported to have prepared plans for office building at Broad St. and 4th Ave.; 10 stories; fireproof; will let contract in a few weeks; C. B. Goethius, Rome, is reported to have charge of leasing offices.

Md., Baltimore.—Crown Cork & Seal Co., Guilford and Girard Aves., will erect administration building at factory; O. G. Simonson, Archt., Maryland Casualty Tower, Baltimore; details not decided.

N. C., Lincolnton.—First National Bank has plans by Louis H. Asbury, Charlotte, N. C., for bank building; 25x90 ft.; ordinary construction; composition roof; hot-water heat; electric lights; cost \$10,000; bids opened about Mch. 10. (Lately noted at N. C., Charlotte.)

S. C., Greenville.—Farmers & Merchants' Bank, J. P. Abney, Prest., will improve bank building.

Va., Charlottesville.—People's National Bank will erect bank and office building at Main and 3d Sts.; cost about \$100,000.

Va., Charlottesville.—National Bank of Charlottesville purchased 3-story brick building at Main and 2d Sts. and will expend \$20,000 to remodel; ordinary construction; tin roof; steam heat; Milburn, Heister & Co., Archts., Union Savings Bank Bldg., Washington, D. C.

Tenn., Maryville.—Bank of Blount County, John M. Clark, Chrmn. of Building Com., is having plans prepared by Albert B. Baumann, 713 Henson Bldg., Knoxville, for bank, office, store and clubrooms and Masonic hall; 3 stories; 30x160 ft.; ordinary construction; gravel roof; steam heat; electric lights; cement sidewalks; construction begins about Mch. 10. (Lately noted.)

Tex., Beaumont.—Caswell estate will erect store and office building. (See Stores.)

Tex., El Paso.—Commercial Building Co. has plans by Trost & Trost, El Paso, for building at Mills and Mesa Sts.; steel frame; brick exterior; concrete floors; fireproof; is receiving bids for structure 3, 7 and 14 stories; size undetermined; foundation to support 14 stories; cost (depending on size) \$65,000 to \$225,000. (Previously noted.)

Tex., Silsbee.—Carr Gibbs will erect building for offices, etc. (See Theaters.)

### CHURCHES

Fla., Clearwater.—Christian Church will erect building. Address The Pastor.

Fla., Homestead.—Methodist Episcopal Church will erect building; main auditorium to seat 250, Sunday-school to seat 75; white stucco exterior; cost \$4000; E. A. Nolan, Archt., Miami, Fla.

Fla., Miami.—Catholic congregation, Rev. J. McLaughlin, pastor, will not at this time erect building lately reported.

Fla., Miami.—Methodist Episcopal Church South, Rev. J. R. Cason, pastor, will erect building; cost about \$40,000.

Ky., Middlesboro.—Jewish Temple of Zion will erect temple; 2 stories; steam heat; first story concrete; upper story pressed brick.

Md., Baltimore.—Union Square M. E. Church, Lombard and Calhoun Sts., Rev. J. F. Hesse, pastor, 1409 W. Lombard St., will erect building adjoining present structure for parish-house, Sunday-school room, etc.

Md., Hamilton.—Hamilton Presbyterian Church has plans by Clyde Friz, 1523 Munsey Bldg., Baltimore, for building at Harford Rd. and Evergreen Ave.; 45x55 ft.; seating capacity of main auditorium 400; Sunday-

school 500; stone; slate roof; steam heat; electric lighting; gas emergency equipment; cost about \$20,000; bidders are: G. Walter Tovell, Eutaw and McCulloh Sts.; E. G. Turner, 15 E. Fayette St.; J. Henry Smith, German and Light Sts.; Cowan Bldg. Co., 106 W. Madison St.; Edw. Watters, 509 N. Charles St.; Cogswell-Koether Co., 406 Park Ave.; A. Knell, Jr., 215 St. Paul St.; C. C. Watts, 113 W. Hamilton St.; Gladfeiter & Chambers, 2074 Woodberry Ave.; D. M. Andrews Co., Mt. Vernon Ave. and 26th St.; all of Baltimore; bids due Feb. 20. (Lately noted.)

Md., Thurmont.—United Brethren Church, Rev. Paul E. Holdcraft, pastor, will improve building, including new front, construction of Sunday-school room, bell tower, floor, seating, steam-heating plant, electric lights, etc.; structure 42x66 ft.

Mo., St. Louis.—Carondelet Methodist Episcopal Church, Rev. Frank I. Finch, pastor, will erect \$40,000 building at Kings Highway and Colorado Ave.

N. C., Greenville.—Memorial Baptist Church will erect chapel. Address The Pastor.

N. C., Henderson.—Holy Innocents Church has plans for parish-house. Address The Rector.

Tex., Galveston.—Norwegian Seamen's Mission, Rev. Olaf Brevik, pastor, will erect building at 18th and Market Sts.

Tex., McKinney.—Rev. M. F. Wheeler, pastor First Baptist Church, will erect building on Willcox St.; 40x48 ft.; metal roof; cost \$5000; lighting plant, \$50; sidewalks, \$150. (Lately noted.)

Va., Norfolk.—First Calvary Baptist Church has plans by Rosell Edward Mitchell and F. Wilson Wilcox, Norfolk, for building at Wide and Henry Sts.; limestone, terracotta and stucco on brick exterior; hardwood interior finish; frescoed walls; main auditorium and gallery to seat 2400; cost about \$65,000, including site.

Va., Pulaski.—Methodist Church plans to erect building at 3d and Jefferson Sts.; brick or stone; cost \$30,000; considering plans by Frank Stone, Pulaski.

### CITY AND COUNTY

Fla., South Jacksonville.—City Hall.—City plans to erect city hall; Wm. H. Meyer, Mayor.

Ga., Rome.—Municipal Building.—City voted \$75,000 bonds for municipal building and \$25,000 bonds for city hospital; these amounts to be supplemented from other sources. Address Mayor Hank. (Lately noted.)

La., New Orleans.—Shed.—Dock Board will probably begin construction of Julia-St. shed in April or May.

La., New Orleans.—Warehouse.—Dept. of Public Finance, Acct. Div., opened bids to erect warehouse and toolroom at municipal repair plant; J. A. Petty, New Orleans, is lowest bidder at \$7236; structure to be 700x95 ft.; 1 story; frame; metal sides and roof; W. J. Hardee, City Engr., City Hall. (Lately noted.)

N. C., Elizabeth City.—Jail.—Pasquotank County Comms. are having plans prepared by Harvey Abrames, 346 Arcade, and H. W. Simpson, Paul-Gale-Greenwood Bldg., both of Norfolk, Va., for improvements to jail (mostly cell work) to cost about \$3500; will let contract about Mch. 1. (Lately noted.)

### COURTHOUSES

Ga., Lincolnton.—Samuel L. Wilkes, Ordinary, Lincoln County, receives bids until Mch. 15 to erect 2-story brick and frame courthouse; plans and specifications at office of Mr. Wilkes at Lincolnton, G. Lloyd Preacher, Archt., Augusta, Ga., and Willis Irvin, Washington, Ga. (Lately noted.)

### DWELLINGS

D. C., Washington.—H. R. Howenstein, 1314 F St. N. W., will erect dwelling at 630 Massachusetts Ave.; 2 stories, 18x16 ft.; brick; tin roof; hot-water heat; electric light; cost \$3000; plans and construction by owner.

D. C., Washington.—Orlof R. Pederson has plans by Geo. N. Santnyers, 1406 S St. N. W., Washington, for 2-story frame dwelling at 2507 Rhode Island Ave. N. E.; cost \$3000; construction by owner.

D. C., Washington.—J. S. Flannery has plans by Marsh & Peter, 530 13th St. N. W., Washington, for \$20,000 residence on California Ave. near 24th St. N. W.; 2½ stories; basement; colonial brick; limestone trimmings; date of opening bids not set.

D. C., Washington.—Harry A. Kite, 1338 G St. N. W., is having plans prepared by A. E.

Landvoigt, 713 14th St. N. W., Washington, to erect eight 2-story dwellings at 3600-14 Park Pl. N. W.; 18x30 ft.; brick; slag roof; hot-water heat; electric lighting; cost \$24,000; construction by owner.

D. C., Washington.—J. S. Gruver has plans by Geo. T. Santnyers, 1406 S St. N. W., Washington, for five 2-story brick dwellings at 2909 17th St. N. W.; two 2-story frame dwellings at 3910 Livingston St. N. W., and 3706-12 Keokuk St. N. W.; cost \$31,000; construction by owner.

D. C., Washington.—Kennedy Bros., 1314 H St. N. W., have plans by A. H. Sonnemann, 1334 H St. N. W., Washington, and will erect 7 dwellings at 626-38 Quebec Ave.; brick; slag roof; hot-water heat; electric light; cost \$33,250.

Fla., Jacksonville.—Brown Realty Co. will erect 1-story frame dwelling on 6th St. between Liberty and Walnut Sts.; 6 rooms; composition vulcanite roofing; cost \$3000; plans and construction by owner.

Fla., Jacksonville.—B. Bucholtz will erect 2-story frame dwelling on the Boulevard between 5th and 6th Sts.; cost \$4000.

Fla., Miami.—E. A. Nolan, Archt., Miami, will receive bids to erect residence on Belle Isle; 10 rooms; 2 stories; cost \$8000; also \$1000 boathouse.

Fla., Miami.—Frederic H. Rand is reported to expend \$75,000 to \$100,000 to erect dwellings in Miramar; 2 on bay front to cost \$15,000 each, 6 to 12 others to cost \$5000 to \$10,000; August Geiger, Archt., Miami.

Fla., St. Augustine.—E. V. E. Larsen will erect residence on Roselle St.

Fla., Pensacola.—Dr. Magee has plans by Wm. Alfred, Pensacola, for dwelling of bungalow design; 32x48 ft.; frame; vulcanite asphalt shingle roof; gas and electric lighting.

Fla., Sarasota.—M. L. Young will erect residence on Pine St.; 38x40 ft.; 2 stories; mill construction; shingle roof; cost \$2500; construction by owner.

Ga., Americus.—Jas. C. Denham will erect residence on Felder St.; plans by and construction under supervision of B. C. Hogue, Americus.

Ga., Atlanta.—C. C. Evans will erect dwelling on Candler St.; cost \$12,000.

Ga., Atlanta.—H. O. Reese will erect 5 frame dwellings on Woodrow Pl.; cost \$3300; day labor.

Ga., Atlanta.—W. D. Beattie will erect 2 frame dwellings at 52 and 55 Fairbanks St.; cost \$4800; day labor.

Ga., Atlanta.—R. F. Ingram will erect 5 one-story dwellings in rear 83-5 Greenwood Ave.; day labor; cost \$3550.

Ga., Atlanta.—Mrs. L. M. Nicholes will erect 2 two-story brick-vener dwellings at 697-701 Ponce DeLeon Ave.; cost \$16,000; day labor.

Ga., Columbus.—James A. Lewis and Geo. N. Murrah will erect 7 bungalows on 5th Ave. between 15th and 16th Sts.; cost about \$3000 each; Chas. F. Hickman, Archt., Columbus.

Ky., Louisville.—Susanna Billinger will erect 4 frame dwellings on Monta Vista court and Pennsylvania Ave.; cost \$10,500.

Ky., Louisville.—Anna M. McGill will erect brick dwelling at 1423 Cherokee Rd.; cost \$7000.

Md., Baltimore.—C. H. Bradford, 1109 Continental Bldg., is having tentative plans prepared for dwelling; cost about \$6500.

Md., Baltimore.—W. B. Gerwig, 600 Equitable Bldg., Baltimore, is preparing plans for 24 dwellings on 28th St. between Guilford Ave. and Barclay St.; 15x45 ft.; 2 stories; brick; tin roof; steam heat; gas and electric light; cost about \$48,000; owner's name withheld; construction by owner in about 6 months.

Md., Baltimore.—John W. Styne, Forest Park, Baltimore, will erect residence at 4203 Maine Ave.; 30x28 ft.; frame; slate roof; hot-water heat; electric lights; construction begun.

Md., Baltimore.—Jas. A. Bealmear & Son, 1106 Fidelity Bldg., have plans by Jos. Gerwig for 10 dwellings at Falls Rd. and Cold Spring lane; 2 stories; 14x42 ft.; brick; tin roof; steam heat; gas and electric light; cost about \$15,000; construction by owner. (Lately noted.)

Md., Baltimore.—Walter L. Westphal, 1700 N. Bond St., has plans by W. H. Hogg, 3200 E. Fairmount Ave., Baltimore, for 56 dwellings at 1600-54 and 1601-55 N. Smallwood St.; 2 stories; 14x55 ft.; brick; asphalt roofing; furnace heat; 4 store fronts; cost about \$75,000; construction by owner.

Md., Baltimore.—Abell Building Co., 422 Equitable Bldg., has plans by Stanislaus

Russell, 2900 Clifton Ave., Baltimore, for 6 dwellings on Barclay St. near 30th St.; 2 stories; five 16x40 ft., one 24x32 ft.; brick; slag roof; hot-air heat; cost about \$9200; construction by owner.

Md., Baltimore.—Jas. B. Yeatman, 472 Park Heights Ave., has plans by Henry J. Tinley, 4722 Liberty Heights Ave., Baltimore, for 2 dwellings in 3400 block Auchentoroly Terrace; 2 stories, 15x56 ft.; brick; slag roof; hot-water heat; cost about \$12,000; construction by owner.

Md., Bethesda.—Miss Hackett is having plans prepared by Flournoy & Flournoy, 709 Wilkins Bldg., Washington, D. C., for dwelling; 2 stories, 26x26 ft.; frame, stucco; slate roof; hot-water heat; electric light; cost about \$3000; bidders are Roby Bros., Thos. Owings, both of Bethesda; A. C. Warthen, Kensington, Md.; John Simpson & Son, Chevy Chase, Md.; Jas. C. Marsh, Washington, D. C.; W. H. Dawson, Herndon, Va.; bids due Feb. 26. (Lately noted.)

Md., Frederick.—Geo. B. Kehne has plans by Geo. S. DeGrange, Frederick, for 3 dwellings on Elm St.; 44x48 ft.; slate roof; steam heat; cement sidewalks; construction by owner, to begin in April; cost \$6000. (Lately noted.)

Md., Roland Park.—John M. Cates, 2308 Maryland Ave., Baltimore, is having plans prepared by Ellicott & Emmart, Union Trust Bldg., Baltimore, for residence; 2½ stories; hollow tile construction; 43x45 ft.; cost about \$15,000; bids due Feb. 23.

Mo., Kansas City.—B. F. Herr will erect residence at 1017 W. 57th St.; tapestry brick and cut stone; green mat tile roof; 2 glassed-in sleeping porches; 48x46 ft., exclusive of porches; cost, including garage, \$25,000.

Mo., Kansas City.—Thos. S. Ridge, 333 Ridge Bldg., has plans by Henry E. Hill, Lynhurst Hotel, Kansas City, for dwelling on W. Santa Fe Rd.; 34x64 ft.; ordinary construction; slate or tile roof; steam heat; possibly small electric elevator; cost about \$20,000. Address Mr. Ridge. (Lately noted.)

Mo., St. Louis.—Leisner Realty & Building Co. will erect 2 two-story dwellings at 1133-35 Lawn St.; cost \$6000; construction by owner.

Mo., St. Louis.—Rev. J. J. Glennon will erect 3-story dwelling at 6052 Waterman St.; cost \$10,000; construction by owner.

Mo., St. Louis.—Henry D. Flory will erect residence on Cottage Ave.

N. C., Charlotte.—John M. Scott will erect residence on S. Tryon St.; 2 stories; tapestry brick veneer; 23 to 30 rooms; W. H. Peeps, Archt., Charlotte; total investment \$30,000.

Okla., Tulsa.—J. S. Cosden rejected all bids to erect residence and is having new plans made by Henry F. Holt, 315 E. 10th St., Kansas City, Mo. (Lately noted.)

S. C., Charleston.—Henry S. Allen will erect dwelling at 3 Wesson St.; cost \$3000.

Tenn., Memphis.—S. Malkin will erect residence at 1513 N. Parkway; 1 story; 10 rooms; brick; cost \$4000.

Tex., Austin.—F. L. Wilkins will erect dwelling and garage at 1205 Hillside Ave.; cost \$3500.

Tex., Denton.—H. T. Higgs will erect residence on W. Hickory St.

Tex., Fort Worth.—A. D. Dickerson will erect residence; cost \$4000.

Tex., Beaumont.—J. J. Hebert will erect 2-story residence at Ave. D and Blanchette St.; stucco brick.

Tex., Gonzales.—W. H. Kokernot has plans by Henry T. Phelps, San Antonio, for dwelling and garage lately noted; green tile roof; cost \$25,000; heating \$1500; lighting \$600. (See Machinery Wanted.)

Tex., Houston.—J. W. Yeagley plans to erect residence; cost \$4000.

Tex., Houston.—P. E. Johnson will erect \$3750 residence.

Tex., Houston.—F. J. Marett will erect residence in Montrose; cost \$4500.

Tex., Houston.—Dr. N. N. Allen will erect residence at Lovett Blvd. and Mt. Vernon; cost \$8000.

Tex., Houston.—R. E. Burt, Brazos and McGowen Sts., will erect residence in Montrose; brick; green tile roof; cost \$20,000.

Va., Richmond.—Mrs. W. O. Betts will erect 2-story frame dwelling on Montrose Ave.; cost \$3600.

Va., Roanoke.—L. S. Gillespie, 205 Poyen Bldg., will erect 2 dwellings on Hanover Ave., Eureka Circle Addition; 1 story, 36x40 ft., and 2 stories, 36x42 ft.; mill construction; metal roof; cost \$3500 and \$4800, respectively; hot-water heating plant, \$400; city lights; plans and construction by owner. (See Machinery Wanted.)



W. Va., Huntington.—Azel Meadows, Trustee, will erect 3 eight-room brick residences at 1214-16 7th St.; cost \$9000.

### GOVERNMENT AND STATE

Fla., Palm Beach.—Postoffice.—W. I. Metcalf will erect building, of which first floor will be occupied as postoffice; 50x90 ft.; 3 stories; concrete; foundation to support 2 additional stories; upper floors for offices.

La., New Orleans.—Naval Station.—Bureau of Yards and Docks, Navy Dept., Washington, D. C., Wm. M. Smith, Acting Chief, receives bids until May 15 to erect 1-story frame dwelling for chief operator and 1-story frame dormitory for operators at naval station; plans and specifications from bureau at Washington and commandant of station at New Orleans.

S. C., Paris Island.—Quarantine Station.—Treasury Dept., Oscar Wenderoth, Supervising Archt., Washington, D. C., rejected bids for repairs to Quarantine Station; will re-advertise.

Tex., Bryan.—Postoffice.—Treasury Dept., Oscar Wenderoth, Supervising Archt., Washington, D. C., rejected all bids to erect post-office. (Previously noted.)

Va., Fort Myers.—Barracks, etc.—Constructing Quartermaster opened bids to erect 3 sets of non-commissioned officers' quarters and quartermaster barracks; mill construction; cost \$17,791, complete; Richardson & Burgess, Colorado Bldg., Washington, D. C., are lowest bidders. (Lately noted.)

### HOSPITALS, SANITARIUMS, ETC.

Ala., Lafayette.—Dr. Wm. D. Gaines will erect sanatorium on Montgomery St.; about 36x90 ft.; steam heat; electric lights; cost \$8000 to \$10,000. (Lately noted.)

Ark., Little Rock.—City Council passed ordinance providing election April 14 on \$150,000 bonds to erect city hospital. Address The Mayor.

Ga., Rome.—City voted \$25,000 bonds for hospital. (See City and County.)

Ky., Winchester.—Dr. D. H. McKinley will erect 20-bed hospital on S. Main St.; probably stucco construction; cost \$20,000 to \$30,000.

La., New Orleans.—Presbyterian Hospital has plans by Rathbone E. DeBuys, New Orleans, for clinic building on Girod St.; will also erect power-house and laundry; total cost \$20,000; Rev. J. C. Barr, Chrmn. Board of Directors. (Lately noted.)

Md., Baltimore.—Board of Awards, John Hubert, Acting Pres., receives bids at office of Richard Gwinn, City Register, until Feb. 24 to furnish material and erect conveyer shed at Bayview Asylum; plans and specifications at office of C. E. Stubbs, Inspector of Buildings, City Hall. (City lately noted to expend \$10,000 for improvements at Bayview.)

Tex., Wichita Falls.—Wichita County Commissioners and city engaged Field & Clarkson, Field Bldg., Fort Worth, as architect for joint city and county hospital; sold \$50,000 bonds. (Lately noted.)

### HOTELS

Fla., Tampa.—Frank E. Bridges, Port Henry, N. Y., is reported to have acquired site 180x98 ft. at Twigg St. and Nebraska Ave. and to erect 10-story 200-room hotel.

Mo., Kansas City.—Locke H. Sawyer, Independence, Mo., will erect hotel at 10th and Locust Sts.; 3 stories; faced with light gray brick and white terra-cotta; 50x132 ft.; cost \$30,000; C. M. Williams, Archt., Kansas City.

Mo., Kansas City.—Willard H. Jones will erect 4 additional stories to Hotel Sherman, providing total of 225 rooms.

### MISCELLANEOUS

Ark., Little Rock.—Grandstand.—Chamber of Commerce and Board of Trade are having plans prepared by Theo. M. Sanders, Little Rock, for grandstand and bleachers at West End Park. (Lately noted.)

Md., Baltimore.—Lunchroom.—John R. Thompson Co., 350 N. Clark St., Chicago, will remodel and equip as lunchroom space in building at Baltimore St. and Guilford Ave.; 40x97.6 ft.; reported cost about \$30,000.

Tenn., Maryville.—Clubrooms.—Bank of Blount County is having plans prepared for building to contain clubrooms, etc. (See Bank and Office.)

Va., Lynchburg.—Cafe.—Mrs. Ellen M. Wall is having plans prepared by Heard & Cardwell, Lynchburg, for building at 719 Main

St., to be occupied by New York Cafe; 3 stories; 26x32 ft.; semi-fireproof; buff brick; slag roof; main dining-room 20x40 ft.; private room 20x20 ft.

### RAILWAY STATIONS, SHEDS, ETC.

Ark., Hazen.—Chicago, Rock Island & Pacific Ry., C. A. Morse, Ch. Engr., Chicago, and St. Louis Southwestern Ry., C. D. Purdon, Ch. Engr., St. Louis, are reported to erect union station.

Tenn., Union City.—Nashville, Chattanooga & St. Louis Ry., H. McDonald, Ch. Engr., Nashville, is reported to erect union station.

### SCHOOLS

Fla., Chipley.—City is having plans prepared by Warren & Goin, Gainesville, Fla., for high school; 6 classrooms, auditorium, laboratory, library, domestic-science room, basement; steam heat; also having plans prepared by same Archts. to remodel graded school. (Lately noted.)

Fla., Fort Meade.—Fort Meade Subschool Dist. plans election on \$25,000 bonds to pay floating debt of \$7500 and erect high school. Address Dist. School Trustees.

Fla., St. Petersburg.—Greenspring School Dist. will vote on \$15,000 bonds for schools. Address Dist. School Trustees.

Ga., Atlanta.—Fulton County Board of Education will soon begin erection of first unit of Milton Ave. School, to cost \$5000.

Ga., Decatur.—City votes Mch. 20 on \$25,000 bonds to erect grammar school; F. T. Hopkins, Mayor.

Ga., East Lake, P. O. at Atlanta.—Town contemplates bond issue to erect school to accommodate 150 pupils, etc. Address Town Clerk.

Ga., Macon.—Board of Education plans \$300,000 bond issue for school improvements.

Ga., McCaysville, P. O. at Epworth.—Town votes Feb. 20 on \$10,000 bonds for school improvements; J. E. Adams, Mayor.

Ga., Rome.—Berry School will erect dining hall to cost about \$25,000; plans prepared.

Ky., Farmington.—Farmington Graded School Trustees will erect school on North St.; about 50x60 ft.; ordinary construction; metal roof; hot-air heat to cost \$276; cost without mechanical equipment \$6000. (Lately noted.)

La., Plaquemine.—School Dist. No. 2, Iberville parish, voted \$10,000 bonds to erect and equip school; J. E. Messick, Secy. School Board. (Lately noted.)

Md., Mount Airy.—Carroll County School Commrs., Westminster, Md., will erect high school; cost \$15,000 to \$20,000; Legislature will be petitioned to authorize \$30,000 bond issue.

Md., Chestertown.—School Com. engaged W. L. Hance, Wilmington, Del., as architect for proposed school to be erected at cost of \$16,000.

Miss., Greenville.—J. E. Leppert, Chrmn. of Bldg. Com., receives bids until March 15 for material and erection of high school, including building proper, heating, plumbing and wiring; plans and specifications at office of R. H. Hunt, Archt., Chattanooga.

Miss., Senatobia.—Agricultural High School Trustees are having plans prepared by Ben Price, Birmingham, Ala., for 2 buildings; 2-story brick building to cost \$12,000 and \$9000 frame dormitory; will let contract Mch. 22.

Miss., Wesson.—Copiah Lincoln Trustees, I. J. Williams, Secy., have plans by Eugene McCormick, Masonic Temple, Brookhaven, Miss., for 2 frame buildings for agricultural high school near Wesson; contract let Mch. 2.

Tenn., Chattanooga.—Trustees of Bonny Oaks Industrial School will erect girls' building to contain 2 dormitories, gymnasium, laundry, etc.; cost about \$10,000; C. C. Bearden, Archt., Chattanooga. (Lately noted.)

Tenn., Chattanooga.—Hamilton County Board of Education receives bids until March 2 to erect and install plumbing, lighting and heating for North Chattanooga, St. Elmo and addition to Avondale schools; plans for former by J. D. Alsop, Chattanooga, who will furnish plans and specifications; for latter by R. H. Hunt, Chattanooga, who will furnish blank proposals, plans and specifications. (Lately noted.)

Tenn., Knoxville.—Board of Education is considering erection of additional structure for Central High School and high school at Farragut; cost about \$100,000; J. R. Lowry, Dr. A. L. Foster and W. T. McFee, Finance Com. of Board of Education.

Tenn., Sewanee.—Alpha Alpha Chapter, Kappa Alpha Fraternity, University of the South, will rebuild chapter-house lately noted damaged by fire at loss of \$3000; Lee Tolley is interested.

Tex., Corsicana.—City is considering election on \$100,000 bonds for schools, streets and sewers. Address The Mayor.

Tex., Lockney.—Independent School Dist. opens bids Mch. 1 (extended date) to erect school building; 96x90 ft.; 2 stories and part basement; semi-fireproof; steel frame and brick walls; composition roof; direct-indirect heating and ventilating; cost \$15,000; heating, ventilating and plumbing under separate contract; Berry & Kaufman, Archts., Amarillo, Tex. (Lately noted.)

Tex., Midlothian.—Geo. Newton, Secy. of School Board, and M. L. Waller & Co., Archts., 413 Dan Waggoner Bldg., Fort Worth, receive bids until Feb. 20 to erect 2-story brick school building; plans at office of architects. (Lately noted.)

Tex., Temple.—City will erect brick grammar school in Freeman Heights; cost \$10,000. Address The Mayor.

Va., Cripple Creek.—City is reported to erect school. Address The Mayor.

Va., Lebanon.—Lebanon Dist. School Board will petition Board of Supervisors for election on \$20,000 bonds for school improvements.

W. Va., Parkersburg.—Parkersburg School Dist. voted \$250,000 bonds for schools; F. L. Packard, Archt., Columbus, O. (Lately noted.)

### STORES

Ark., Heber Springs.—Mrs. J. W. Rhodes will erect brick business building on 4th St.

Fla., Fort Meade.—Wilson Trading Co. Incpt. with \$25,000 capital stock; Dr. O. B. Lewis, Pres.; will erect building; brick; 50x100 ft.; construction begins in about 2 weeks.

Fla., Plant City.—Jas. Warrender, Tampa, and Tom Warrender will erect brick building at Collins and Drane Sts. to replace present structure.

Ga., Macon.—Taylor-Bayne Drug Co. has plans by Curran Ellis, Macon, for improvements to basement of structure at 2d and Cherry Sts., for storeroom and refrigerating plant for 6 branch stores of company; plans include reinforced concrete sidewalk, cement and tile basement floor, etc.

Ky., Henderson.—J. R. Sowders will erect business building to replace structure lately noted damaged by fire at 104 Elm St.; 261x60 ft.

Md., Baltimore.—Walter L. Westphal will erect stores and dwellings. (See Dwellings.)

Mo., Kansas City.—B. T. Whipple Real Estate Co., agents for J. C. Gates, will erect building at 20th and Main Sts.; 1 story; 15 storerooms; 143x133 ft.; construction to permit erection of 3 additional stories.

Mo., St. Louis.—Vale Company Investment Co. will erect 1-story store building at 6500-08 Virginia Ave.; cost \$4000.

S. C., Rock Hill.—A. C. Izard has plans by J. S. Starr, Rock Hill, for store and office building; 26x140 ft.; 2 stories; ordinary construction; Barrett's specification roof; city lighting; cement sidewalks; no heating plant; day labor. (Lately noted.)

Tenn., Maryville.—Bank of Blount County is having plans prepared for building for stores, etc. (See Bank and Office.)

Tex., Beaumont.—Caswell estate will erect business building on Pearl St.; brick; 2 stories; foundation to support 2 additional stories; lower floor for stores; upper floor, offices.

Tex., Fort Worth.—N. H. Lassiter will expend \$3000 to repair building at 310 Houston St.

Tex., Houston.—Shotwell & Harris will remodel 3-story brick store at Main and Texas Sts.; cost \$6000.

Tex., San Antonio.—R. A. Ferris will expend \$5000 for alterations to building on W. Commerce St.

Tex., Terrell.—Bids received by J. S. Grinnan, Jr., and Dr. T. P. Davis until Feb. 15 to erect 3 one-story brick buildings; plans and specifications at office of Grinnan & Grinnan, Terrell.

Va., Norfolk.—Higgins Land Co., care of Neff & Thompson, Norfolk, will erect 7 stores on Granby St.; 181½x63 ft.; 19 ft. high; 1 story, with provision for 2 additional stories; fireproof; tar and gravel roof; stoves; concrete sidewalks; cost \$18,000; R. B. Richardson & Co., National Bank of Commerce Bldg., Norfolk, are lowest bidders for con-

struction; Neff & Thompson, Archts., Norfolk; address R. B. Richardson & Co. (Lately noted.)

W. Va., Weston.—John Gun will erect store building to replace burned structure occupied by J. M. Hickman; 36x68 ft.; 1 story; cost about \$3000; lighting plant to cost \$75.

### THEATERS

Md., Baltimore.—Wm. O. Sparklin, George S. Childs, Asso. Archt., are preparing plans for two motion-picture theaters; one, 42x100 ft.; metal cornices and ornamental front; plans ready about Feb. 20; other, 60x100 ft.; date of opening bids undecided; both brick; slag roof; steam heat; electric light; locations and owners' names withheld.

Md., Baltimore.—Edmondson Amusement Co., Edmondson Ave. and Pulaski St., is having plans prepared by Wm. O. Sparklin, 502 Law Bldg., Baltimore, Geo. S. Childs, Asso. Archt., same address, for motion-picture theater on Edmondson Ave. near Pulaski St.; 42x100 ft.; brick and steel; ornamental metal front; slag roof; steam heat; electric and gas light; plans ready about Feb. 19; bids due about Feb. 24. (Lately noted.)

N. C., Greensboro.—Bijou Theater, Mr. Pryor, Mgr., will expend several thousand dollars to construct new front.

Okla., Henryetta.—Barclay Morgan will erect theater building; owner will purchase materials.

Tenn., Memphis.—E. J. Pearson has plans by Harker & Cairns, Memphis, for moving-picture theater at Lamar and Waldran Sts.

Tex., Laredo.—H. F. Valdes will erect vaudeville theater; fireproof; seating capacity 1000; 59x133 ft.; classic style; C. T. Boelhaewe, Archt., San Antonio.

Tex., Slisbee.—Carr Gibbs will erect 3-story brick building for moving-picture theater, offices and apartments.

### WAREHOUSES

D. C., Washington.—Washington Steel & Ordnance Co., Giesboro Point, D. C., will erect 1-story steel warehouse; cost \$5000.

Fla., Jacksonville.—Robbins Ripley Co. will remodel 1-story galvanized iron building at foot of Liberty St. on water-front; cost \$7000.

Md., Baltimore.—Baltimore Storage & Moving Co., 1710-20 Edmondson Ave., has plans by Wyatt & Nolting, 1012 Keyser Bldg., Baltimore, for warehouse and stable on premises; 64x124 ft.; brick and concrete; concrete roof; electric light; bidders are Edward Walsh, 20 Clay St.; Cowan Building Co., 106 Madison St.; Gladfelter & Chambers, Maryland and Parkdale Aves.; Arthur F. West, 15 E. Fayette St.; Henry Smith & Sons, 7 E. German St.; D. M. Andrew Co., Mt. Vernon Ave. and 26th St.; Burns & Russell, American Bldg., all of Baltimore; bids due Feb. 15, 12 M.

Mo., Kansas City.—Hidenour-Baker Grocery Co. is reported having plans prepared by McKeckle & Trask, Gloyd Bldg., Kansas City, for warehouse and factory building at St. Louis Ave. and Mulberry St.; 157,000 sq. ft. floor space; fronts of exposed concrete and glass; completion in November; architects wire Manufacturers Record: Structure 120x180 ft.; 9 stories; reinforced concrete; sprinkler system; steel sash; 3 electric elevators; steam heat; cost \$175,000.

S. C., Darlington.—C. W. Milling will erect tobacco warehouse to replace structure lately noted damaged by fire; 80x200 ft.; metal roof; electric lights from local plant; cost \$4500.

Tex., Fort Worth.—J. N. Brooker, R-2, Basement Wheat Bldg., will erect warehouse at 245-47 W. 15th St.; 2 stories and basement; 60x100 ft.; ordinary or mill construction; gravel roof; electric lighting; freight elevator to cost about \$1000; construction to begin Mch 1. Address Mr. Brooker. (Lately noted.)

Tex., Galveston.—Southern Products Co., Dallas, purchased two blocks of ground and will erect building. (Lately noted.)

Tex., Galveston.—Galveston Wharf Co., John Sealey, Pres., will, it is reported, have plans prepared by Ford & Davis, 821 Canal St., New Orleans, La., for double-deck wharf sheds at Pier 41; each floor to have 260,000 sq. ft. floor storage room; machinery will be installed for handling freight on second floor; cost to exceed \$300,000.

Tex., Sulphur Springs.—O. M. Pate & Sons will erect brick warehouse; 60x100 ft.; cost \$3500.

## BUILDING CONTRACTS AWARDED

## APARTMENT-HOUSES

Fla., Dunedin.—A. E. Batchelder let contract for construction of foundation for building to contain apartments, etc. (See Stores.)

Ga., Atlanta.—E. W. Gillespie let contract to M. G. Norris, Atlanta, to erect addition to building at 365 Pryor St. for 4 apartments; shingle roof; cost \$3000; Mackie Construction Co., Archt., Atlanta. (Lately noted under Stores.)

Mo., St. Louis.—J. Schnatmeyer let contract to Bonded Building Co., St. Louis, to erect 3 two-story tenement-houses at 4020-22-24 Lafayette St.; cost \$10,500.

Mo., St. Louis.—M. J. Ehrlicher let contract to J. M. Dolan, St. Louis, to erect 2-story tenement-house at 2608-10 N. Goodfellow St.; cost \$4500.

Mo., St. Louis.—Mrs. E. C. Shober will erect 3-story tenement-house at 3852 Russell St.; cost \$13,000; construction by Dr. Shober.

Mo., St. Louis.—W. J. Hummelshelm let contract to W. J. Hurt, St. Louis, to erect two 2-story tenements at 4066-16 Lafayette St.; cost \$7626.

Mo., St. Louis.—F. L. Dittmeier let contract to John Hartman, St. Louis, to erect 2 two-story tenement-houses at 4231-23 Penrose St. and 4031 Shaw St.; cost \$11,000.

Mo., St. Louis.—John Vit, 3428 California Ave., has plans by and let contract to Leo K. Milberger, 3426 California Ave., to erect tenement-house at 2827 Nebraska Ave.; ordinary mill construction; gravel roof; \$250 heating plant; total cost \$4000. (Lately noted.)

Va., Norfolk.—H. I. Britton let contract to J. W. Saunders, Norfolk, to erect apartment-house; 2 stories; frame; 2 suites; cost \$3100.

Va., Norfolk.—I. H. Wades will erect 3-story brick apartment-house at 2535 Villa Circle; gravel roof; hot-water heating plant to cost \$820; electric lights; total cost \$9000; construction by owner; subcontractors are E. W. Face & Son (brick), Norfolk; M. M. Salmon.

## ASSOCIATION AND FRATERNAL

Ky., Louisville.—Suburban Lodge, A. F. and A. M., let contract to Lichtenfeld Metzner, Louisville, to erect store and lodge building at 3d and Central Ave.; flat composition roof; ordinary construction; low-pressure steam heat; cost \$20,000; Joseph & Joseph, Archts., Great Southern Bldg., Louisville. (Previously noted.)

## BANK AND OFFICE

Ark., Heber Springs.—Fred Johnson let contract to erect store and office building (See Stores.)

Fla., Dunedin.—A. E. Batchelder let contract for construction of foundation of building for offices, etc. (See Stores.)

Mo., St. Louis.—St. Louis Country Produce Market Co. let contract to erect store and office building. (See Stores.)

Okla., Tulsa.—Wells, Fargo & Co. Express, J. B. Christensen, Supt., Oklahoma City, has plans by and let contract to Brickner-Laws Construction Co., Tulsa, to erect office building on Main St.; 30x150 ft.; 1 story; fireproof; pressed brick; Barrett specification roofing; gas stoves for heating to cost \$75; cost \$6000 without mechanical equipment.

Tex., El Paso.—El Paso Union Stockyards Co. let contract to Otto P. Kroeger, El Paso, to erect livestock exchange building; 1 story; brick; Spanish mission style; 18 rooms; cost of construction \$9000; foundation to permit erection of additional stories later; contracts for plumbing, electric wiring, etc., to be let separately; total cost \$16,000. (Lately noted.)

Tex., Irene.—First National Bank has plans by and let contract to J. O. Galberth, Hillsboro, Tex., to erect bank and business building; 25x60 ft. and 25x80 ft., respectively; ordinary construction; tin roof; cost \$5000; W. R. Mason may be addressed. (Lately noted.)

## CHURCHES

Md., Arlington.—Arlington First Presbyterian Church, Rev. Gustav A. Briggleb, pastor, 5210 Palmer Ave., has plans by Clyde Friz, 1523 Munsey Bldg., Baltimore, and let contract to Cowan Bldg. Co., 106 W. Madison St., Baltimore, to erect building at Belvidere and Park Heights Aves.; seating capacity about 500; 42x65 ft.; wing, 25x35 ft., for Sunday-school; stone; slate roof; steam heat; electric lights; gas emergency equipment; cost \$20,000. (Lately noted.)

Md., Baltimore.—Trustees West Baltimore M. E. Church have plans by W. J. Palmer, 527 9th St. N. W., Washington, D. C., and let contract to Cowan Bldg. Co., 106 W. Madison St., Baltimore, to erect church and Sunday-school on Pimlico Blvd. near Old Pimlico Rd.; 60x80 ft.; brick; slate roof; steam heat; cost \$40,000. (Lately noted.)

N. C., Charlotte.—J. H. Foard, Charlotte, has contract to erect tabernacle at Brevard and East Ave.; 180x141 ft.; frame; rubber roof; cost \$3000 to \$3500; C. C. Hook, Archt., Charlotte. Address Mr. Foard.

N. C., Vanceboro.—Baptist Church, Rev. W. M. Huggins, Pastor, Fort Barnwell, N. C., has plans by and will let contract to W. J. Jacobs, Vanceboro, for foundation for frame building; 30x50 ft.; ordinary or mill construction; 4 in. shingle roof; ordinary stoves; gasoline light; cost \$3000 without mechanical equipment; foundation to consist of solid brick wall 24 in. high; general contract not yet let.

Tex., Beaumont.—St. Mark's Episcopal Church let contract to W. McDaniels & Son, Port Arthur, Tex., to erect parish-house; 2 stories; brick; Spanish tile roof; 52x90 ft.; low-pressure steam heat; electric wiring; cost \$22,800 without mechanical equipment; will construction; Cram & Ferguson, Archts., 1110 Scanlon Bldg., Houston; ultimate plans include erection of \$90,000 church building and \$15,000 rectory. (Lately noted.)

## CITY AND COUNTY

Fla., Tampa.—Stable.—Board of Public Works let contract to B. F. Walker, Tampa, to erect city stable. (Contract lately noted let to another contractor, but this is rescinded.)

Ky., Whitesburg.—Armory.—R. B. Franklin, Whitesburg, is architect and contractor to erect armory and drill hall; 60x130 ft.; mill construction; metal roof; stoves; cost \$2975 without mechanical equipment; H. T. Day, County Judge. (Lately noted.)

Fla., Bartow.—City Hall.—City let contract at \$10,637 to Howard & Wreath, Sarasota, to erect city hall; 40x60 ft.; 3 stories; ordinary construction; brick and stone trimmings; overhanging tile roof; electric light and heat; fireproof vault; Mark & Sheftall, Archts., Jacksonville. (Lately noted.)

Tex., Galveston.—City Hall.—Gross Construction Co., Waco, Tex., general contractor to erect city hall, let contract at about \$10,000 to Dabney Brick Co., Galveston, for buff brick for construction of front. (Lately noted.)

Tex., Madisonville.—Jail.—Madison County Comms. let contract to Southern Structural Steel Co., San Antonio, to erect jail; 2 stories; 25x40 ft.; fireproof; tar, gravel and paper roof; stoves; cost \$3000 to \$3000; Joe E. Webb, County Judge. (Lately noted.)

Tex., Colorado.—Jail.—Mitchell County Comms. let contract to Southern Structural Steel Co., San Antonio, to erect jail; stone and reinforced concrete blocks; cost \$7500.

W. Va., Wheeling.—Comfort Station.—City let contract to J. W. Beltz & Sons, Wheeling, to erect comfort station at Fifth Ward Market-house.

## DWELLINGS

Ark., Little Rock.—Mrs. Ada Sullivan let contract to James H. Brewer, Little Rock, to erect 8-room 2-story residence at 2704 Arch St.; cost \$3500.

Ga., Atlanta.—H. W. Nicholes & Son have contract to erect 2 residences on Ponce de Leon Ave. for C. S. and R. D. King; brick veneer; 40x40 ft. each; tile roof; hot-air heat; electric and gas lights; cost \$16,000.

Ga., Atlanta.—W. H. Brittain has plans by and let contract to H. W. Nicholes & Son, Atlanta, to erect residence on Briarcliff Rd.; 50x40 ft.; brick veneer; slate roof; hot-air heat; electric lights; cost \$8000. (Lately noted.)

Ga., Macon.—Willingham Loan & Trust Co. has plans by and let contract to Shaw Bros. Co., Macon, to erect 2 brick veneer dwellings on Orange St. lately noted; 2 stories; metal roof; cost \$8000; heating, \$800; lighting, \$125. (See Machinery Wanted.)

Md., Baltimore.—E. J. Gallagher Realty Co., 919 Munsey Bldg., let following contracts for construction of 20 dwellings in 3000 block McGowan St., 28 dwellings in 500 block N. Decker St., 21 dwellings in 500 block Potomac St.; Wm. M. Miller & Bros., 140 S. Highland Ave., brick work; Lafayette Mill & Lumber Co., Lafayette Ave. and P. B. & W. R. R., mill work; Philip Carey Co., 41 S. Gay St., roofing; E. W. Schultz & Co., Central Ave. and Jackson St., metal work; F.

Klappenberger, 657 Columbia Ave., heating, hot water; Geo. R. Minnick Jr., 863 Greenmount Ave., plumbing; all of Baltimore. (Lately noted.)

Md., Baltimore.—Cityco Realty Co., 2 E. Lexington St., has plans by Stanislaus Russell, 2900 Clifton Ave., Baltimore, and let contract to J. Kent Hubbard, 1839 W. Lanvale St., Baltimore, to erect 8 dwellings on Cottage Ave. between Parkhurst Ave. and Fayette St.; 24x34 ft.; 2 stories; brick; slate and slag roof; steam heat; gas and electric light; cost about \$20,000.

Mo., Kirkwood.—Capt. Lorraine F. Jones has plans by and let contract to Wm. Bopp, Clayton, Mo., to erect residence to be occupied by Lawrence D. Bridge; 2 stories; 9 rooms; stucco and tile; cost \$14,000.

Mo., St. Louis.—Colfax Realty Co. let contract to B. J. Charleyville, St. Louis, to erect 2-story dwelling at 4905 Hortense St.; cost \$15,000.

Mo., St. Louis.—Herbert M. Edmunds let contract to B. J. Charleyville, St. Louis, to erect residence; timbered construction; 67 ft. wide, with side wings; living-room 30x15 ft.; 12 rooms; first story variegated matt brick; upper stories beveled oak laid in mortar; green and purple slate roof; cost \$35,000; P. J. Bradshaw, Archt., St. Louis.

Mo., St. Louis.—H. Rosenbaum let contract to erect store and dwelling. (See Stores.)

Mo., St. Louis.—J. C. White let contract to erect cottage on New Ashland Pl.; brick.

Mo., St. Louis.—W. H. Weismeyer let contract to alter store and dwelling. (See Stores.)

N. C., Statesville.—T. L. Green let contract to L. B. Tomlinson, Statesville, to erect residence at 124 E. Sharoe St.; 9 rooms; brick veneer; metal shingle roof; construction begins Feb. 1.

S. C., Rock Hill.—J. Sidney Adams let contract to C. A. Dobbins, Rock Hill, to erect dwelling; 35x75 ft.; ordinary construction; wood shingle roof; electric lights; cost \$4000; J. S. Starr, Archt., Rock Hill. (Lately noted.)

Tenn., Knoxville.—Joe J. Toms, Trustee, let contract to L. A. Galyon & Son, Knoxville, to erect two 7-room bungalows at 1643-45 White Ave.; ordinary construction; shingle roof; hot-air heat; electric lights; cost \$3000; R. F. Graf & Sons, Archts., Knoxville. (Lately noted.)

Tenn., Nashville.—P. J. Kane, 314 5th Ave. North, let contract to James Howell & Sons, Nashville, to erect residence at 1006 17th Ave. South; 35x50 ft.; 6 rooms; fireproof; composition roof; vapor or steam heat; cost \$3500; O. J. Billis, Archt., Nashville. (Lately noted.)

Tex., Beaumont.—Dr. Bruce Richardson let contract to Mr. Garson to erect residence; 2 stories and basement; stucco front; red pressed brick trimmings; hardwood interior finish; hot-water heat; hollow tile construction; cost \$12,000; Mauer, Knoblock & Simank, Archts., Beaumont.

Tex., Fort Worth.—R. E. Watson let contract to Yorty-Kelsay Building Co., Fort Worth, to erect 2 one-story bungalow cottages at 2900 Jennings Ave.; ordinary construction; wood shingle roof; cement walks; cost \$2000; J. B. Edmondson and Russell Henry have contracts for carpentry; Geo. Yorty, Archt., Fort Worth; general contractor may be addressed.

Tex., Galveston.—J. B. Davis let contract to John Caruthers, Galveston, to erect residence on Ave. O; cost about \$5000.

Tex., Galveston.—T. S. Burke let contract to J. W. Zempter, Galveston, to erect residence; 2 stories; 16 rooms; frame; cost about \$5000.

Va., City Point.—C. W. Hancock & Sons, Lynchburg, Va., general contractors to erect 61 dwellings for E. I. Dupont DeNemours Powder Co., Wilmington, Del., let following subcontracts: Electrical work, T. J. Burns & Co.; plumbing, G. K. Raine & Co.; heating, F. L. Watson; painting, Manly & Jones; plastering, Edward Warren, all of Lynchburg; plans by North American Construction Co., Bay City, Mich., call for structures of various sizes; ordinary construction; shingle roof; cost, without mechanical equipment, \$100,000. (Lately noted.)

Va., Hickory Ground, R. F. D. from Hay Market.—Dr. C. F. Eason let contract to Geo. W. Coppersmith, Rappahannock, Norfolk, to erect residence.

Va., Norfolk.—Larchmont Corp. let contract to A. F. Smith, Norfolk, to erect 20 dwellings in Larchmont; cost about \$70,000.

Va., Norfolk.—H. C. Cunningham let contract to W. J. Atkinson, Norfolk, to erect bungalow in Courtland Pl.; cost \$3000.

Va., Richmond.—W. A. Stansbury, 215 Temple St., let contract to Davis & Archer, 2519 Hanover Ave., Richmond, to erect dwelling at 231 Temple St.; 22x48 ft.; ordinary construction; tin roof; cost \$3000; C. H. Archer, Archt., 2515 Hanover St., Richmond. Address contractors. (Lately noted.)

## GOVERNMENT AND STATE

Tex., Ennis.—Postoffice.—Treasury Dept., Oscar Wenderoth, Supervising Archt., Washington, D. C., let contract at \$52,275 to Volney N. Taylor, 535 Adams Ave., Huntington, W. Va., to erect postoffice; steel and reinforced concrete; 2 stories and basement; 4000 sq. ft. ground area; semi-fireproof; composition roof. (Lately noted.)

## HOSPITALS, SANITARiums, ETC.

Miss., Meridian.—Dr. J. H. Rush let contract to J. D. Watkins, Meridian, to erect hospital; 40x80 ft.; slate or tile roof; steam heat; hand-power elevator; P. J. Krouse, Archt., Meridian. (Previously noted.)

N. C., Burlington.—Consolio & Overmeyer, Norfolk, have contract for brick work for hospital; 75x80 ft.; ordinary construction; tile roof; electric elevator; Benton & Moore, Archts., Wilmington, N. C. (Lately noted.)

Tex., Temple.—Gulf, Colorado & Santa Fe Rwy. Hospital Assn. let contract to H. D. McCoy, Cleburne, Tex., to erect hospital wing; 50x90 ft.; 3 stories; fireproof; gravel roof; \$5000 heating plant; \$3000 lighting plant; cost without mechanical equipment, \$45,000; Sanguinetti & Staats, Archts., Fort Worth, Tex. (Lately noted.)

## HOTELS

Ark., Newport.—N. B. Wishon let contract to W. H. Swoetser, Newport, to erect hotel; 2 stories; brick; 50x134 ft.; 2 stores on first floor; 26 rooms on second floor; cost about \$12,000.

Tenn., Greenville.—W. L. Beckham let contract to J. F. Denning, Mexia, Tex., to erect hotel; 3 stories and basement; reinforced concrete, steel and brick; tar and gravel roof; vacuum steam heat; electric elevator; cost \$80,000; H. B. Macklin, Archt., Greenville; construction begins Feb. 10. (Lately noted.)

## MISCELLANEOUS

La., Shreveport.—Grandstand.—Shreveport Baseball Assn. let contract to W. H. Werner, Shreveport, to erect grandstand; concrete base; accommodate 3000; cost \$6833; J. Y. Snyder, Archt., Shreveport. (Lately noted.)

## SCHOOLS

Miss., Waynesboro.—Town let contract to I. H. Vick, Waynesboro, to erect lately-noted school on Court Sq.; 60x80 ft.; 2 stories and basement; brick; composition slate roof; steam heat; electric lights; cost \$10,000 without mechanical equipment; J. H. Croft, Archt., Waynesboro; construction begins April 1. (See Machinery Wanted.)

Tenn., Knoxville.—Knox County High School Board let contract at \$12,296 to J. J. Gillenwater, Knoxville, to erect school at Carter's, and at \$2500 to J. W. Wethered, Knoxville, for plumbing; 2 stories. (Lately noted.)

W. Va., Huntington.—Board of Education of Huntington Independent School Dist. let contract at \$246,000 to Henry Persun, Huntington, to erect high school, and to Rockaway Plumbing Co. at \$20,906 for plumbing and \$39,590 for heating and ventilating; structure to be fireproof; steel girders and trusses encased in concrete; granite base; brick and terra-cotta trim; 3 stories above ground floor; 25x151 ft.; composition roof; monumental staircases and granite steps; auditorium to seat 1400; steam and air mechanical system; manual training, domestic science and gymnasium equipment; showers; Verus T. Ritter, Archt., Huntington. Address general contractor. (Lately noted.)

## STORES

Ark., Heber Springs.—Fred Johnson let contract to erect store and office building; brick; 2 stories; cost \$4000.

Ark., Marianna.—B. F. Latta let contract to erect 2 brick store buildings.

Fla., Dunedin.—A. E. Batchelder let contract to C. S. Christie, Dunedin, to erect foundation and 4-in. cement floor, 45x70 ft., for building on Broadway; 2 stores on lower floor; offices and apartments on upper floor.

Ky., Louisville.—Suburban Lodge, A. F. and A. M., let contract to erect store and office building. (See Association and Fraternal.)



Miss. Shubuta.—Geo. S. Weems let contract to Standard Construction Co., Meridian, Miss., to erect store on Main St.; 110x90 ft.; standard brick construction; tin roof; cost \$7000 without mechanical equipment; Burt Stuart, Archt., Meridian. (Lately noted.)

Mo., St. Louis.—W. H. Weismeyer let contract to Craig & Taylor, St. Louis, to alter store and dwelling at 2814-22 N. Grand St.; cost \$3950.

Mo., St. Louis.—H. Rosenbaum let contract to H. Thiebes, St. Louis, to erect 2-story store and dwelling at 4100 Shaw St.; cost \$7600.

Mo., St. Louis.—Mrs. A. Teasdale let contract to James H. Bright & Co., St. Louis, to underpin store building at 615 N. 4th St.; cost \$3000.

Mo., St. Louis.—St. Louis County Produce Market Co. let contract to M. C. Bartels, St. Louis, to erect 2-story store and office building at 2-23 N. Sarah St.; cost \$30,000.

N. C., Winston-Salem.—L. B. Brickenstein, Winston-Salem, has contract at about \$5000 for plumbing in building for E. W. O'Hanlon, for which Travers-Wood Co., Inc., Richmond, Va., has general contract, and Richmond (Va.) Structural Steel Co. contract for structural steel; plans by W. C. Northrup, Winston-Salem, call for 6-story structure; 62x35 ft.; fireproof; total cost \$70,000. (Lately noted.)

Tenn., Morristown.—Mims & Goodson Dry Goods Co. has plans by J. H. Baumann, 61 Holston Bldg., Knoxville, for store; 4 stories and basement; 40x100 ft.; brick; gravel roof; steam heat; electric elevator; sprinkler system; cost \$30,000; contract for framing material let to C. B. Haag Lumber Co., Morristown, and for Rough-Tex brick to Kingsport Brick Corp., Kingsport, Tenn.

Tenn., Nashville.—Burk & Co. are reported to erect business building on Church St. between 4th and 5th Aves.; 4 stories; cost \$100,000; Asmus & Norton, Archts., Nashville; contract for foundation (under construction) let to Lightman-Sewell Co., Nashville.

Tex., Galveston.—Galveston Brewing Co. let contract to P. J. Callan, Galveston, to erect storeroom at 2706 Market St.; 1 story;

brick; cost \$3000; Stowe & Stowe, Archts., Galveston.

Tex., Galveston.—B. A. Cook let contract to J. W. Zempter, Galveston, to erect building at 2713 Market St.; 42x70 ft.; brick and hollow tile; cost \$7000 to \$8000.

Tex., Irene.—First National Bank let contract to erect bank and business building. (See Bank and Office.)

Va., Norfolk.—Bute Realty Corporation is reported to have let contract to Seay Bros., Norfolk, to erect 5 single store buildings at Bute and Duke Sts.; 50x111 ft.; ordinary construction; gravel roof; cost \$4800; Neff & Thompson, Archts., Norfolk. (Lately noted.)

Va., Norfolk.—S. D. Scott let contract to Nash-Jones Co., Norfolk, to erect building on Granby St.; 2 stories; 25 ft. by 78 ft. 9 in.; lower floor for stores; upper floor, photograph studio; fireproof; tar and gravel roof; steam heat, second floor; stoves, first floor; concrete sidewalks; cost \$8000; Neff & Thompson, Archts., Norfolk. (Lately noted.)

## THEATERS

Tex., Austin.—Mrs. Sallie J. Nalle estate let contract at \$51,000 to J. F. Johnson, Denton, Tex., to erect theater lately noted; 75x162 ft.; fireproof; cement roof; contracts for structural steel, plumbing, heating, ventilating, etc., not yet let; total cost \$125,000; Ebersson, Fugard & Knapp, Archts., Lytton Bldg., Chicago; Geo. A. Endress, Res. Archt., Austin. (See Machinery Wanted.)

## WAREHOUSES

Mo., St. Louis.—Jos. T. Ryerson let contract to James Stewart Co., St. Louis, to erect 1-story warehouse at 2210-18 N. 1st St.; cost \$6000.

N. C., Charlotte.—Travers Wood Co., Inc., Richmond, Va., general contractor to erect warehouse for Mercantile Development Co., let contract to Corrugated Bar Co., Buffalo, N. Y., for 500 tons reinforcing bars; plans by Francisco & Jacobus, 200 5th Ave., New York, call for structure 600x100 ft.; 4 stories; reinforced concrete; unit brick curtain and dividing walls; composition roof; metal windows; steel sash; total cost about \$180,000. (Previously noted.)

## RAILROAD CONSTRUCTION

### RAILWAYS

Ark., Cow Mound.—Missouri & North Arkansas R. R. will build 4 mi. spur from Cow Mound to timber lately bought by Argo, Trice & Co. W. O. Galbreath, Harrison, Ark., is chief engineer.

Ark., De Queen.—Concerning report that a line would be built from Broken Bow, Okla., to De Queen, 26 mi., to connect the Texas, Oklahoma & Eastern and the De Queen & Eastern railroads, Prest. H. Dierks says that there is no work contemplated this year, at least at present.

Ark., Harrisburg.—The Business Men's Club is considering a proposition to build a standard-gauge lumber railroad from Harrisburg southwest 10 mi.

Ark., Turrell.—The Arkansas Eastern R. R. will, it is reported, be extended to Earle, Ark., about 7 mi. F. E. Gary is Prest. at Turrell.

Fla., West Palm Beach.—Contract for the proposed Palm Beach & Everglades R. R. to Lake Okechobee will, it is announced, be let this week. J. A. Moore, Miami, Fla., is Gen. Mgr. Chas. H. Baker of New York is Prest.

Ga., Kingsland.—Construction of the proposed extension of the Atlantic, Waycross & Northern R. R. from Kingsland to Folkston, Ga., 22 mi., will, it is stated, begin within a month. Survey to Waycross, Ga., 35 mi. more, is made. Capt. L. Johnson, St. Marys, Ga., is Prest.

Ga., Rochelle.—Construction has begun, it is reported, upon the extension of the Ocella Southern R. R. northward from Rochelle to Pope City, about 8 mi. J. A. J. Henderson, Ocella, Ga., is Prest.

Ky., Dawson.—Concerning recent press report that it was surveying for grade reduction and second track between Dawson and Princeton, Ky., the Illinois Central R. R. Co. says it is making some preliminary investigations looking toward grade reduction and line improvement on its Kentucky Division. A. S. Baldwin, Chicago, is Ch. Engr.

Mo., Kansas City.—Kansas City Terminal Ry. Co. contemplates building a connecting line to the Kansas City Stockyards. J. V. Hanna is Ch. Engr.

N. C., Old Fort.—The Quinton-Adams Co. is reported to have almost completed a nar-

row-gauge lumber railroad from Old Fort to Catawba Falls.

Okla., Buffalo.—Alva, Buffalo & Colorado R. R. Co. is chartered to build a line about 20 mi. long between Buffalo and Rosston, Okla.; capital \$10,000; incorporators, J. H. Moran, L. A. Walton, George Stafford, L. L. Walton and Ida M. Morgan, all of Alva, Okla. Either steam, electricity or gasoline may be used for motive power.

Okla., Jennings.—Atchison, Topeka & Santa Fe Ry. denies report that it is surveying for a line from Marmarac to Jennings. The company is not making any extensions at this time.

Okla., Miami.—St. Louis & San Francisco R. R. is reported, will build a branch from a point several miles south of Baxter Springs, Kans., to Miami, Okla., about 15 mi., via Cardville and Commerce. F. G. Jonah, St. Louis, Mo., is Ch. Engr.

Okla., Tulsa.—Oklahoma Union Traction Co., A. J. Biddison, purchaser, will, it is reported, make improvements.

N. C., Andrews.—Andrews Lumber Co. contemplates extension of its railroad for possibly 40 mi. Address Col. Frank Buell.

Tenn., Shelbyville.—Nashville, Chattanooga & St. Louis Ry. contemplates, according to a local report, extension of 2 mi. from Shelbyville to Sylvan City. Hunter McDonald, Nashville, Tenn., is chief engineer.

Tex., Dallas.—Dallas Southwestern Traction Co. proposes to build an interurban railway from Dallas to Cleburne, Tex., about 40 mi., and other points, Ballinger, 150 mi. from Cleburne, being, it is said, an objective point. E. P. Turner of Dallas is Prest.; Sam P. Cochran of Dallas, B. M. Swanson of Alvarado, Tex., and W. Polindexter of Dallas, V. Pa.; George Williams, Secy.-Treas.; B. S. Wathen, Consult. Engr.; John T. Witt, Engr. in charge. Directors include Brooke Smith of Brownwood, Tex.; J. E. Boog-Scott, Coleman, Tex.; John L. Cleveland, Cleburne; B. M. Sansom, Alvarado; P. K. Thompson, Venus; James Edwards, Mansfield, Tex.; S. P. Cochran, E. P. Turner, E. L. Sargent, Cullen F. Thomas, J. J. Carter, P. B. Hunt, J. D. Rose, E. H. Coalbear and Geo. G. Taylor, all of Dallas.

Tex., Dallas.—Eastern Texas Traction Co., according to an official announcement,

awaits a return of normal financial conditions to resume construction of its line between Dallas and Greenville, Tex., about 50 mi. There is a contract with the Stone & Webster Engineering Corp. of Boston to finish the road, on which practically all grading, bridge and culvert works is complete. F. E. White is Prest. and J. W. Crotty V.-P. and Gen. Mgr. at Dallas.

Tex., Graham.—Chicago, Rock Island & Gulf Ry. denies recent press report that it would build extension from Graham to Albany, Tex., about 50 mi.

Tex., Lubbock.—Alpheus Judd of Lubbock, together with J. S. Grisham of Sweetwater, Tex., and others of Nashville, Tenn., is reported planning construction of the Panhandle & New Mexico Ry., about 200 mi. long, from either Lubbock or Plainview, Tex., to Roswell, N. M. Survey to be made immediately.

Tex., Van Horn.—Grading is reported begun on the Van Horn Valley R. R., 85 mi. being under contract on proposed line to Orange, N. M. King & Runquist of Duluth, Minn., are general contractors, and Engstrom-Hosford Co. of Northfield, Minn., has grading contract, which is a subletting, a number of sections being already in hand. Jos. Irbay, Van Horn, is Secy. of the railroad company.

Va., Farmville.—Norfolk & Western Ry. has made some surveys between Pamplin

City and Burkeville, Va., about 25 mi., for the possible construction of a low-grade route several miles to the south of Farmville. Not decided when construction will begin. J. E. Crawford, Roanoke, Va., is Ch. Engr.

Va., Dante.—The last spike compelling track on the Elkhorn extension of the Clinchfield Ry. has been driven, says a local report. This completes the line to Elkhorn City, Ky., connecting with the Chesapeake & Ohio Ry.

Va., Radford.—Radford-Willis Southern Ry. Co. is organized with \$300,000 maximum capital stock to build the proposed railroad from Radford to Willis, Va., about 25 mi., along Little River and Indian Creek. C. W. Simpson will make a location survey. Officers were elected thus: J. L. Vaughan, Prest.; E. F. Strong, 1st V.-P.; R. L. Gardner, 2d V.-P.; W. L. Castle, Secy. and Asst. Treas.; A. J. McClung, Treas. and Asst. Secy.

## STREET RAILWAYS

Ga., Atlanta.—Georgia Railway & Power Co. contemplates extending line to site of Emory University, probably along Clifton Rd. P. S. Arkwright is Prest.

Tex., Marshall.—Texas-Louisiana Traction Co. has applied for franchise to build street railways in Marshall. City Commission may give information.

## MACHINERY, PROPOSALS AND SUPPLIES WANTED

Manufacturers and others in need of machinery or supplies of any kind are requested to consult our advertising columns, and if they cannot find just what they wish, if they will send us particulars as to the kind of machinery or supplies needed we will make their wants known free of cost, and in this way secure the attention of manufacturers and dealers throughout the country. The Manufacturers Record has received during the week the following particulars as to machinery and supplies wanted.

### "WANTS"

**Agricultural Implements.**—Florida Colonization Co., C. W. Vredenburg, 228 South Ave., Rochester, N. Y.—Agriculture implements; for use in Florida.

**Automobile Appliances.**—B. D. Snyder, Box 34, Hedgesville, W. Va.—Addresses of manufacturers of automobile appliances.

**Automobile Materials and Appliances.**—Paolo Casanlotto, Via Principi D'Acaia, 20, Trino, Italy.—Prices (view to representation) on "Canopy cloth, leather for upholstery and linacrusta for use in motor-car manufacture; also other new appliances with reference to motor-car trade."

**Awnings, Materials, etc.**—E. T. Thomas, Box 519, Miami, Fla.—Addresses of manufacturers of awnings for stores and windows; also of manufacturers of material for making awnings.

**Barrel Bung Machinery.**—Dixie Lumber Co., Clifton Forge, Va.—Addresses of manufacturers of machinery to make barrel bungs.

**Barrel Machinery.**—Dunlop Milling Co., Clarksville, Tenn.—Machinery for making flour barrels.

**Barrels.**—Georgetown Coca-Cola Bottling Co., Georgetown, S. C.—Barrels; wishes to correspond with Baltimore manufacturers.

**Bluing Sheet.**—G. J. Hawes, Cabot, Vt.—Prices, from manufacturers, on bluing sheet; also data as to process and materials used in manufacture.

**Boiler.**—See Pile Drivers, A. W. Duckett & Co.

**Boats.**—See Launches (Gasoline), A. W. Duckett & Co.

**Boring Mill.**—J. N. Brownlee, Shubuta, Miss.—Large horizontal boring mill; floor plate type.

**Boxes (Polish, Tin), etc.**—Mrs. Anne J. Barbrey, Clinton, N. C.—Data and prices on 3-oz. boxes for silver polish; also machine for filling the boxes; polish to be put in boxes in dough form and let harden; wants "dent on top of cake for sponge."

**Bricks.**—Crozet Ice & Cold Storage Co., Crozet, Va.—Brick or cement and steel for walls. (See Cold-storage Plant.)

**Brick (Fire).**—Bristol Brick Co., Bristol, Tenn.—Prices and samples on fire brick, carloads, f. o. b. Bristol.

**Brick (Cement and Sand) Machinery.**—Tioga Gravel Co., Suite 1, Hotel Bentley, Alexandria, La.—Addresses of manufacturers of machinery for making cement and sand brick.

**Bridge Estimates.**—Putnam County Comms., J. H. Millican, Chrmn., Palatka,

Fla.—Estimates for rebuilding (of concrete) of bridge 4000 ft. long across St. John's River. (Length incorrectly noted in previous statement.)

**Building Materials.**—L. S. Gillespie, 206 Poyen Bldg., Roanoke, Va.—Prices on roofing, windows, doors and composition plaster boards.

**Cannery.**—J. J. Ross, Mgr., Hume Electric Co., Hume, Mo.—Data on establishment of cannery for fruits and vegetables, and prices on machinery; small plant, to be constructed with view to later additions; data to include cost estimate, size of building, etc.; electric power available, or power from oil engine.

**Cement.**—See Cold-storage Plant.)

**Cement.**—See Shoe Manufacturing Supplies, etc., Antonio Aran.

**Cement Drain Tile Machinery.**—Boylkins Drug Co., Boykins, Va.—Addresses of manufacturers of machinery to make cement drain tile.

**Cement.**—Navy Dept., Bureau Supplies and Accounts, Saml. McGowan, Paymaster-Gen., Washington, D. C.—Bids until Mar. 2 on 360,000 lbs. refractory cement, schedule 7911, delivery navy-yards, East and West; schedule on application.

**Cleaning and Polishing Machine Manufacture.**—Roby Cleaning & Polishing Machine Corp., Staunton, Va.—Correspondence with manufacturers making specialties of small machines; view to placing order for manufacture of cleaning and polishing machine in large quantities.

**Clearing.**—John L. Roper Lumber Co., Norfolk, Va.—Bids on clearing 100,000 acres land.

**Composition Plaster Boards.**—See Building Materials.

**Concrete Reservoir.**—City of Coshoc-ton, O.—Will soon advertise bids for 3,000,000-gal. reinforced concrete covered reservoir; plans submitted by Chester & Fleming, Engrs., Pittsburg, Pa.; City Council considering \$50,000 appropriation.

**Cold-storage Plant.**—Crozet Ice & Cold Storage Co., Crozet, Va.—Architect and engineer to draw plans and specifications for 4 or 5-story and basement reinforced concrete or brick cold-storage plant addition, capacity to be 20,000 barrels apples; brick or cement and steel for walls; roofing material; insulation; cooling coils.

**Concrete Mixer.**—See Hoisting Engine, etc.

**Concrete Dam Construction.**—Dalton Country Club, H. J. Smith, Prest., Dalton,

Ga.—Prices on construction of concrete dam about 450 ft. long, 4 to 7 ft. high.

**Conveyor (Belt).**—Geo. J. Adams, 39 South St., corner Old Slip, New York.—Robbins belt conveyor; 150 ft. by 24 or 30-in. belt; second-hand.

**Cotton (Awning) Cloth.**—See Awnings, Materials, etc., E. T. Thomas.

**Cotton (Unspun).**—Navy Dept., Bureau Supplies and Accounts, Saml. McGowan, Paymaster-Gen., Washington, D. C.—Bids until March 9 on 2,900,000 lbs. unspun cotton, schedule 7910, delivery Navy-yard, Washington, D. C.; schedule on application.

**Cotton Gin Machinery.**—Farmers' Warehouse Co., J. L. Sweet, Prest., Waycross, Ga.—Open bids in July on 2 short and 1 long cotton gin with engine and boiler.

**Creamery Equipment.**—Weakley County Creamery Co., G. S. Knox, Prest., Martin, Tenn.—Open bids March 1 on creamery machinery.

**Crucibles.**—Navy Dept., Bureau Supplies and Accounts, Saml. McGowan, Paymaster-Gen., Washington, D. C.—Bids until March 2 on 750 crucibles, schedule 7914, delivery Navy-yard, Washington, D. C.; schedule on application.

**Culvert.**—Duval County Commrs., E. A. Ricker, Chrmn., Jacksonville, Fla.—Bids until Feb. 24 to furnish 4400 lin. ft. corrugated-iron culvert in sizes and quantities as follows: 200 ft. 12-in., 200 ft. 15-in., 300 ft. 16-in., 300 ft. 18-in., 300 ft. 20-in., 1500 ft. 24-in., 300 ft. 30-in., 1200 ft. 36-in., 300 ft. 48-in.; specifications obtainable at office Frank Brown, Clerk, Room 2 Courthouse.

**Culvert Construction.**—City Commrs., Mobile, Ala.—Bids until Feb. 23 to construct 1865 ft. reinforced-concrete culvert, 4½ by 10 and 12 ft.; \$10,000 appropriated; plans and specifications on file with Wright Smith, City Engr.; H. Pillans, Mayor.

**Culvert Construction.**—Board of Public Works, Roger McGrath, Secy., Louisville, Ky.—Bids until Feb. 19 to construct reinforced concrete arch culvert across Edwards Pond Branch in Dreschen Bridge St. between Letterle and Delmont Aves.; drawings and specifications on file with Board Public Works.

**Dehydrating (Vegetable) Machinery.**—Fred T. Hildt, 226-7 Flynn-Ames Bldg., Muskogee, Okla.—Addresses of manufacturers of machines for dehydrating vegetables; also data on dehydrating process.

**Desks, Chairs, etc.**—Panama Canal, F. C. Boggs, Gen. Purchasing Officer, Washington, D. C.—Bids until March 3 to furnish desks, chairs, filing units, card-index cabinets, bookcases, electric cable, terminal bells, wire cable, babbitt metal, white brass, nails, plate washers, reamers, flax packing, manila rope and life preservers; blanks and general information relating to this circular (No. 501) may be obtained from this office or offices of assistant purchasing agents, 24 State St., New York; 614 Whitney-Central Bldg., New Orleans, and 1086 North Point St., San Francisco; also from U. S. Engr. offices in Seattle, Los Angeles, Baltimore, Philadelphia, Pittsburgh, Boston, Buffalo, Cleveland, Cincinnati, Chicago, St. Louis, Detroit, Milwaukee, St. Paul, Chattanooga, Louisville, Mobile and Galveston; Commercial Club, Kansas City, Mo.; Chamber of Commerce, Quincy, Ill., and Commercial Club, Tacoma, Wash.

**Ditching Machines.**—Florida Colonization Co., C. W. Vredenburg, 228 South Ave., Rochester, N. Y.—Ditching Machines; for use in Florida.

**Drag Bucket.**—Box 25, Dancy, Wis.—¾-yard drag-line bucket, Page preferred.

**Ebonite.**—See Rubber (Hard), H. Montanari.

**Electric-light Fixtures, etc.**—Board Public Affairs, J. P. Faucette (Mayor), Prest., Argenta, Ark.—Bids until Feb. 23 to furnish and install electric-light fixtures in new city hall; also fireproof vault door; specifications on file office City Clerk, City Hall.

**Electric Light Plant.**—See Sewer Construction, etc., Pablo Beach, Fla.

**Electrical Machinery.**—Lyne & Irvin, Sheandoah Junction, Va.—Second-hand, 15 H. P., single phase, 110 or 125-volt, electric slow-speed motor (Wagner preferred).

**Electrical Machinery.**—H. A. Burke Co., Box 9, Cumberland, Md.—Electrical power for operating machinery in pipe organ plant.

**Electric-light System.**—Hume Electric Co., J. J. Ross, Mgr., Hume, Mo.—Prices on all material for building about 17 mi. electric-light transmission line; carrying 15 amperes at 11,000 volts.

**Electrical Supplies.**—Antonio Aran, Oribau 158, Barcelona, Spain.—Interested,

view to representation, in general electrical supplies and accessories.

**Elevator.**—B. F. & R. P. Gravelly, Martinsville, Va.—Good used hand-power elevator or cheap power elevator operated from line shaft.

**Engine.**—See Pile Drivers, A. W. Duckett & Co.

**Engine and Boiler.**—See Cotton Gin Machinery, Farmers' Warehouse Co.

**Engine (Corliss).**—Pope Mfg. Co., Washington, Ga.—Prices on second-hand 14x 36-in. Corliss engine or 16x42-in. engine, capacity to develop 125 or 150 H. P.; would like to have (about) 10-ft. flywheel on the shaft.

**Engine (Hoisting).**—See Hoisting Engine, etc.

**Filling Machines (Box).**—See Boxes (Polish, Tin), etc., Mrs. Anne J. Barbrey.

**Flour Mill Machinery, etc.**—N. B. McLean, 5712 La Mirada Ave., Los Angeles, Cal.—Data and prices on equipment for flour and feed mill, and for grain dealing; also prices on grain.

**Flour Mills.**—Boykins Drug Co., Boykins Va.—Addresses of manufacturers of small flour mills or bolters.

**Furniture Machinery.**—See Woodworking Machinery.—Florida Colonization Co.

**Glycerine.**—Peter B. Murer, Nils Juelsgt, 9, Christiania, Norway.—Interested, view to representation, in glycerine.

**Grain.**—N. B. McLean, 5712 La Mirada Ave., Los Angeles, Cal.—Prices on grain. (See Flour Mill Machinery, etc.)

**Gutta-percha.**—H. Montanari, 51, Rue de Paradis, Paris, France.—Interested in gutta-percha in very thin tissue; view to representation.

**Hardware.**—Florida Colonization Co., C. W. Vredenburg, 228 South Ave., Rochester, N. Y.—General builders' hardware; for use in Florida.

**Heating Plant.**—I. H. Vick, Waynesboro, Miss.—Prices on boiler and heating fixtures for \$10,000 school.

**Heating System, etc.**—Directors School Dist., Jas. B. Jackson, Jr., Secy., Kansas City, Mo.—Bids at office secretary board in Public Library Bldg until Feb. 18 to furnish materials and perform work necessary to install heating and ventilating apparatus, plumbing and drainage, electric wiring and automatic temperature regulation in Kensington School, to be built at Van Brunt Blvd. and 17th St.; plans and specifications at office of J. H. Brady, Chief Engr., 517 Finance Bldg., Kansas City.

**Hides and Skins.**—See Leather, Bensussan, Sides & Co.

**Hoisting Engine, etc.**—Holbrooks & Bradshaw, Salisbury, N. C.—Second-hand steam hoisting engine, double cylinder, reversible, for material elevators and general hoisting for construction; concrete mixer, 7 to 9 ft. capacity, gasoline or steam power, with side loader.

**Ice Plant.**—See Cold-storage Plant.

**Ice Machine.**—R. T. Graham, Bel-Air, St. Michael, Barbados, W. I.—Prices on ice machines, 25 lbs. capacity; for own use; has electric power available.

**Ice-cream Machinery.**—W. H. Irvin Ice Cream Co., Houston, Tex.—Receiving prices on ice-cream factory machinery. Address W. H. Irvin, Washington and Hemp-hill Sts., Houston.

**Jetty and Dike.**—U. S. Engineer Office, Galveston, Tex.—Bids until Mar. 16 for jetty and dike work at Aransas Pass; information on application; C. S. Riche, Lieut.-Col. Engrs.

**Knitting Machines.**—American Business Agency, second floor, Parsons Bldg., Wadsworth, N. C.—Addresses of manufacturers of family knitting machines.

**Ladders (Step).**—J. N. Hamilton, 601 Chamber of Commerce Bldg., Atlanta, Ga.—Correspondence with manufacturers relative to placing order for (special) construction of platform stepladder for use of mechanics in construction of buildings.

**Lathes.**—Samuel T. Williams, 223 N. Calvert St., Baltimore, Md.—Prices on engine lathe, about 16-in. swing, 6 ft. between centers; fairly heavy.

**Lathes (Pattern Turning).**—C. H. Buck, 317 James Bldg., Chattanooga, Tenn.—Data and prices on pattern turning lathes, capacity for turning at one operation from long billet of wood a number of small turnings up to 2½ in. diam.

**Launches (Gasoline).**—A. W. Duckett & Co., 17 Battery Pl., New York.—Two gasoline launches (for export); about 20 ft. long; power as heavy as possible for this size launch; no fancy trimming; for transporting laborers and for towing.

**Leather.**—See Shoe Manufacturing Supplies, etc., Antonio Aran.

**Leather, etc.**—See Automobile Materials and Appliances.

**Leather Imitation.**—See Rubber (Hard), H. Montanari.

**Leather.**—Faria & Filho, 28, Largo da Trindade, Porto, Portugal.—Addresses of American manufacturers of leather; view to representation.

**Leather.**—Bensussan, Sides & Co., Salonique, Greece.—1000 bundles (or bales) domestic or foreign leather (or hides) for shoe soles, in packages 6 to 8 kilos weight, 4 to 5 millimeters thick, well treated, dry and of good color; the types 1a, 2a and 3a; 100 doz. boxcalf, 2a and 3a, chrome, black and colors, quality II, 12-16; 50 doz. boxcalf varnished chrome, style L. M. 2a and 3a 7-9; delivery c. l. f. Salonique, insured against war risks at cost of seller, free of charges for packing; view to representation.

**Levee Construction.**—U. S. Engr. Office, C. McD. Townsend, Col., Engrs., Customhouse, St. Louis, Mo.—Bids until March 10 to construct 10,000 lin. ft. river bank protection, to include material and work; information on application.

**Locomotive.**—Rosslyn Lumber Co., J. T. Heare, Mgr., Mount Airy, N. C.—Good second-hand 35-in.-gauge Mogul type locomotive; about 24 to 28 tons; rigid wheel base not to exceed 10 ft. Describe and give location and price.

**Manufactures.**—Clarke & Co., 24 Bond St., Sydney, Australia.—Interested in and makes specialties of manufactured articles which appeal to personal, family or household needs. (This company operates in Australia and New Zealand.)

**Manufactured Products.**—D. M. Demetriades & Co., Moumhan Yaldiz Han, Constantinople, Turkey.—Correspondence with American manufacturers interested in extending trade to Oriental territory; view to exclusive agencies.

**Marble and Tile.**—Ernest Nalle, Austin, Tex.—Prices on marble and tile for \$125,000 theater.

**Masonry.**—W. H. Kokernot, Gonzales, Tex.—Bids on all masonry for \$25,000 residence and garage.

**Metal Shingles.**—Shaw Bros. Co., Macon, Ga.—Prices on metal shingles.

**Metals.**—Navy Dept., Bureau Supplies and Accounts, Saml. McGowan, Paymaster-Gen., Washington, D. C.—Bids until March 2 on 27,900 lbs. iron castings, schedule 7913, and 26 to 30 tons pig iron, schedule 7914, delivery Navy-yard, Newport, R. I.; miscellaneous steel forgings, schedule 7908, delivery Navy-yards, Boston and Philadelphia; 39,000 lbs. medium steel angles and 9400 lbs. medium steel plates, schedule 7922, delivery Navy-yard, Portsmouth, N. H.; miscellaneous medium steel angles, steel bar, 26,550 lbs. medium steel plates and miscellaneous steel rod, schedule 7922, delivery Charleston, S. C.; 3400 lbs. steel bar and 91,000 lbs. steel sheet, schedule 7922, delivery Navy-yard, Brooklyn, N. Y.; miscellaneous steel bar (nickel), schedule 7922, delivery Navy-yard, Philadelphia, Pa.; 6000 lbs. soft steel bar, schedule 7914, delivery Navy-yard, Washington, D. C.; miscellaneous steel bar, schedule 7922, and 81,850 lbs. ribbed steel floor plates, schedule 7926, delivery Navy-yard, Norfolk, Va.; 3000 lbs. steel rod, schedule 7922, delivery Boston, Mass.; schedules on application navy pay office nearest each navy-yard.

**Meters (Oil).**—See Tanks (Oil Storage), John B. Boney.

**Mining (Coal) Machinery.**—Southeast Coal Co., H. LaViers, Mgr., Paintsville, Ky.—Soon open bids on mining machinery.

**Mixer (Concrete).**—Light & Power Co., Rocky Mount, Va.—Interested in small concrete mixer; prefer one without attached engine.

**Mixer (Concrete).**—Holbrooks & Bradshaw, Salisbury, N. C.—Concrete mixer, 7 to 9 ft. capacity, gasoline or steam power, with side loader. (See Hoisting Engine, etc.)

**Nails (Brass).**—See Shoe Manufacturing Supplies, etc., Antonio Aran.

**Office Furniture.**—See Desks, Chairs, etc., Panama Canal.

**Oil (Cotton).**—H. Montanari, 51, Rue de Paradis, Paris, France.—Interested in cotton oil; view to representation, especially for export to Africa.

**Paints, etc.**—Antonio Aran, Oribau 158, Barcelona, Spain.—Interested, view to representation, in paints, varnishes, anilines and chemical products for these lines.

**Paints (Insulating) and Varnishes.**—H. Montanari, 51, Rue de Paradis, Paris, France.—Interested in insulating paints and varnishes; view to representation.

**Paper, etc.**—Treasury Dept., Bureau Engraving and Printing, Washington, D. C.—Bids to furnish following supplies for fiscal year beginning July 1, 1915: April 5, for paper and paper-box blanks; April 12, for dextrines, textiles, engraver's supplies and dry colors; blanks, specifications, etc., obtainable on application to Jos. E. Ralph, Director of Bureau.

**Paving.**—E. B. Cline, City Auditor, Tulsa, Okla.—Bids until Feb. 25 to construct concrete sidewalks; plans, specifications etc., on file with City Auditor.

**Paving.**—City of Houston, Tex., Ben Campbell, Mayor.—Bids until Feb. 22 to grade and pave approach to bridge on Capitol Ave.; 2½ in. sheet asphalt, 22½ in. asphaltic concrete; 2½ in. bitulithic, 3 in. wood block, 3½ in. wood block, standard brick, vertical fiber brick (asphalt filler) or 2½ in. Uvalde rock; specifications and information from E. E. Sands City Engr.

**Paving, etc.**—City of Joplin, Mo.—Bids at office City Clerk until Feb. 16 to construct Class B concrete curb and gutter on both sides Joplin St. from C St. to north line North Heights addition, except where curb and gutter is already placed or permits granted; also grade, subgrade, place Class B concrete curb and gutter, and pave, at grade, with Class F macadam, roadway of 13th St. from Joplin to Wall St.; total estimated cost, \$1047.21; under supervision of J. B. Hodgdon, Commr. of Streets and Public Property.

**Paving.**—Commrs. of Public Works, D. B. McKay, Chrmn., Tampa, Fla.—Bids received until Feb. 16 to grade, curb and pave Jefferson St. from Ross to Michigan Ave.; width 30 ft.; 4250 sq. yds. paving; 2500 lin. ft. curbing; Jefferson St. from Michigan to Florabruska Ave.; width 26 ft.; 4100 sq. yds. paving; 2600 lin. ft. curbing; also number of alleys totalling 1250 sq. yds. paving and 2244 lin. ft. curbing; specifications obtainable from City Engr.

**Paving.**—Baltimore (Md.) Board of Awards, care City Register, City Hall.—Bids until March 3 to construct cement footways around city property as follows: Group No. 1—Library, Garrison and Callaway Aves.; Library, St. Paul near 25th St.; School No. 54, 25th St. near Charles St.; School No. 14, Linden Ave. and Wilson St.; city square, Linden and North Aves.; School No. 32, Guilford Ave. and Lanvale St.; total, about 15,000 sq. ft. Group No. 2—School No. 9, S. W. Cor. Fayette and Greene Sts.; Library, Mulberry near Cathedral St.; residence, N. W. Cor. Mulberry and Cathedral Sts.; city square, Fayette and Liberty Sts.; School No. 95, Lexington St. near Fremont Ave.; north end of Calvert St. bridge, east and west footways; total, about 12,000 sq. ft. Group No. 3—School No. 29, Sharp near West St.; Franklin Sq., Calhoun St. side; School No. 20, N. W. Cor. Preston and Eden Sts.; School No. 94, Chase and McDonogh Sts.; School No. 37, Biddle St. and Patterson Park Ave.; School No. 99, North Ave. and Washington St.; total, about 20,000 sq. ft. Group No. 4—School No. 3, S. E. Cor. Eastern and Montford Aves.; Southern Police Station, Ostend near Patapsco St.; School No. 5, Broadway and Ashland Ave.; School No. 7, Mullikin and Alquist Sts.; School No. 45, Greenmount Ave. and Eager St.; School No. 71, Bond and Jefferson Sts.; School No. 80, Eden and Federal Sts.; school, N. W. Cor. Central Ave. and Little Gough St.; School No. 35, Hanover near Winder St.; total, about 17,000 sq. ft.; specifications and proposals sheets furnished upon application at office H. K. McKay, City Engr.

**Paving Blocks.**—Board of Purchase, E. R. Conant, Purchasing Officer, Savannah, Ga.—Bids until Feb. 23 to furnish city with 14,000 sq. yds. granite paving blocks; for specifications and further information address E. R. Conant, Purchasing Officer.

**Paving.**—W. B. Moore, City Clerk, Miami, Fla.—Bids until Feb. 18 to construct sidewalks and curbs.

**Paving.**—City of Houston, Tex., Ben Campbell, Mayor.—Bids until Feb. 20 to grade and pave Chenevert St. from McKinney to Leeland Ave. with sheet asphalt, asphaltic concrete, bitulithic, vertical fiber brick (cement filler) or Uvalde rock asphalt; specifications and information obtainable from E. E. Sands, City Engr.

**Paving.**—City Commrs., Tulsa, Okla.—Bids until Feb. 23 to pave sections of Cincinnati Ave., 13th St., 14th St., Victor Ave., Cameron St. Factory Ave. etc.; plans and specifications on file with E. B. Cline, City Auditor.

**Paving.**—City of Houston, Tex., Ben Campbell, Mayor.—Bids until Feb. 20 to grade and pave Louisiana St. from Texas to Prairie Ave. with 3-in. bitulithic, ¾-in. wooden blocks, standard brick, vertical fiber



brick (cement filler), vertical fiber brick (asphalt filler) or Uvalde rock; specifications and information obtainable from E. E. Sands, City Engr.

**Paving.**—City Council, R. T. Daniel, City Clerk, Clearwater, Fla.—Postponed until later date (not yet announced) receiving of paving construction bids lately noted for Feb. 17; sewer bids received as previously noted.

**Pegs (Shoe, Wooden).**—Bensussan, Sides & Co., Salonique, Greece.—Wooden shoe pegs, in packages of 200 grammes net, in sacks of 6 kilos net, and, if possible, in barrels of 80 to 100 kilos net; view to representation. Send samples and prices.

**Pile Drivers.**—A. W. Duckett & Co., 17 Battery Pl., New York.—For export, a complete pile-driving outfit for 1000-lb. hammer, together with boiler and engine for operation.

**Pipe, etc.**—Richmond Gas Works, W. P. Knowles, Supt., 109 City Hall, Richmond, Va.—Bids until Feb. 17 to furnish f. o. b., freight prepaid, 160 lengths of 8-in., 1200 lengths of 6-in., 600 lengths of 4-in. C. I. bell and spigot gas pipe of standard weight; also following specials: Four 16x16-in. tees, one 12-in. tee with 16-in. center, one 16x12 cross, one 16x8x8 all bells reducing Y, 16 8x6 crosses, 20 8x6 tees, 12 6x4 reducers, 4 8-in. drip pots, 12 6-in. drip pots, 4 8-in. plugs, 2 12-in. hub end brass-lined gate valves, 12 6x6 crosses, 12 6x4 crosses, 6 6-in. tees, 6 8-in. sleeves, 12 6x4 reducer, 12 1.8-in. 6-in. bends, 12 1.8-in. 4-in. bends.

**Pipe (Sewer).**—City Council, McGee, Ark.—Prices on sewer pipe. Address City Clerk.

**Piping.**—See Tanks (Oil Storage), John B. Boney.

**Planers.**—See Woodworking Machinery—Florida Colonization Co.

**Plumbing, etc.**—Treasury Dept., Supervising Archt.'s Office, Washington, D. C.—Bids until March 13 for extension and remodeling of plumbing, etc., in U. S. post-office and courthouse, Auburn, N. Y.; copies of drawings and specifications obtainable at office or office of custodian, Auburn, at discretion of O. Wenderoth, Supervising Archt.

**Pumping Plant.**—U. S. Engr. Office, 602 Burke Bldg., Seattle, Wash.—Bids until March 15 for pumping plant for Lake Washington canal locks; information on application to U. S. Engr. Office, Seattle, Wash.; Chicago or New York; J. B. Cavanaugh, Maj., Engrs.

**Reclamation (Excavation and Reinforced Concrete) Work.**—Dept. of Interior, U. S. Reclamation Service, A. P. Davis, Director and Ch. Engr., Washington, D. C.—Bids at office of U. S. Reclamation Service, Provo, Utah, until March 10 for construction involving about 12,800 yds. excavation and 2100 yds. reinforced concrete near Payson City, Utah; for details address U. S. Reclamation Service at Provo or Washington.

**Refrigerator Linings (Enamel).**—C. H. Kuenzel, 1061 Locust St., Dubuque, Iowa. Addresses of manufacturers (in vicinity preferred) of white enamel linings for family refrigerators.

**Rice Mills.**—W. H. Burch & Sons, Smith Ave., Thomasville, Ga.—Prices on rice mills.

**Road Construction.**—G. P. Coleman, State Highway Commr., and Henrico County Supervisors, Richmond, Va.—Bids until March 1 to improve following roads: Grading, drainage and gravel surface on Nine-Mile Rd. between city limits and Stop 19, 2.3 mi.; grading, drainage and gravel surface on Williamsburg Rd. between city limits and Seven Pines, 5 mi.; grading, drainage and waterbound macadam surface, with surface treatment, Osbourne turnpike between city limits and Sullivan's store, 1.69 mi.; alternate bids on bituminous macadam surface and bituminous concrete surface on Cary-St. Rd. between city limits and Country Club, 1.61 mi.; plans and specifications on file at Clerk's office, Henrico County Courthouse, and office State Highway Com.; specifications on application to State Highway Commr.; blueprints of plans obtainable from Childrey & Co., Inc., Richmond, for 5 cents per set.

**Road Construction.**—Hernando County Commrs., H. D. Evans, Chrmn., Brooksville, Fla.—Bids March 4 at office of M. H. Snow, Clerk, Courthouse, to construct hard-surfaced highways, according to plans and specifications on file Clerk's office and at office of Jaudon Engineering Co., Savannah, Ga.

**Road Construction.**—Robertson County Road Dist. No. 5, S. M. Peters, Secy., Brewood, Tex.—Bids until March 5 to construct system of roads and bridges; contract includes grading and constructing about 50 mi.

earth, sand-clay and gravel roads and all necessary bridges and culverts; plans and specifications obtainable from R. B. Pearce, Bremond, or Robt. J. Potts, 1412 Amicable Bldg., Waco, upon payment of \$10.

**Roofing.**—See Building Materials.

**Roofing Material.**—Crozet Ice & Cold Storage Co., Crozet, Va.—Roofing material. (See Cold-storage Plant.)

**Rubber (Hard).**—H. Montanari, 51, Rue de Paradis, Paris, France.—Interested in ebonite (also called hard rubber and vulcanite) in plates, rods and tubes, pipe stems, stylographs and office requisites; also leather imitation made of vulcanite, with probably a mixture of celluloid.

**Sawmill.**—Rosslyn Lumber Co., J. T. Heare, Mgr., Mount Airy, N. C.—Good second-hand band mill outfit, complete, with resaw, 25,000 to 40,000 capacity. Describe and give location and price, first letter.

**Sawmills.**—Florida Colonization Co., C. W. Vredenburg, 228 South Ave., Rochester, N. Y.—Sawmills; for use in Florida.

**Sewer Construction, etc.**—Bond Trustees (Chas. H. Mann and others), Pablo Beach, Fla.—Bids until Feb. 18 to construct sewer system and electric-light plant; contract plans and specifications on file with Town Clerk.

**Sewer Construction.**—City of McAlester, Okla., J. M. Gannaway, City Clerk.—Bids until Feb. 19 on 5961.7 ft. vitrified pipe sewers, contracts A, B, C and D, in S. 10th St., and in Dist. 37, 40 and 43; separate contracts; bids in duplicate; for further information address City Clerk.

**Sewer Construction.**—Comms. Public Works, Walterboro, S. C.—Receive bids in from 60 to 90 days on sewer construction; \$13,000 available; H. S. Jaudon Engineering Co., Engr., 408 Southern Bank Trust Bldg., Savannah, Ga.

**Sewer Construction.**—Comms. Public Works, Walterboro, S. C.—Receive bids in from 60 to 90 days to construct electric plant; develop about 60 K. W.; plans being prepared by H. S. Jaudon Engineering Co., 408 Southern Bank & Trust Bldg., Savannah, Ga.

**Sewers and Disposal Plant.**—Borough of Greenville, Pa.—Soon advertise bids to construct sewage-disposal plant, intercepting sewers and additional sanitary sewers; estimated cost \$50,000; plans and specifications by Chester & Fleming, Pittsburgh, Pa.

**Sodium Nitrate.**—Navy Dept., Bureau Supplies and Accounts, Saml. McGowan, Paymaster-Gen., Washington, D. C.—Bids until March 9 on 4,900,000 lbs. sodium nitrate, schedule 7909, delivery Navy-yard, Washington, D. C.; schedule on application.

**Shoe Manufacturing Supplies, etc.**—Antonio Aran, Oribau 158, Barcelona, Spain. Interested, view to representation, in following: Patent colt, glazed kid and box-calf leather; supplies for shoe manufactory (brass nails, cement and polishing pastes).

**Shoe Machinery.**—R. L. Glover, Box 244, Nogales, Ariz.—Correspondence with manufacturers of shoemaking machinery.

**Soaps.**—G. B. Williams Co., 409 S. Court St., Quitman, Ga.—Addresses of manufacturers who make toilet and laundry soaps for dealers under dealer's own brand.

**Stickers.**—See Woodworking Machinery. Florida Colonization Co.

**Structural Steel.**—Ernest Nalle, Austin, Tex.—Prices on structural steel for \$125,000 theater.

**Structural Steel.**—Crozet Ice & Cold Storage Co., Crozet, Va.—Steel for walls. (See Cold-storage Plant.)

**Tanks (Oil Storage).**—John B. Boney, Box 65, Wallace, N. C.—Prices on tank; about 6000 or 8000-gal. capacity, for storing crude oil; also prices on meter and about 400 ft. piping to convey oil from cars to tank.

**Tannery Machinery.**—R. L. Glover, Box 244, Nogales, Ariz.—Correspondence with manufacturers of hide-tanning plants and machinery.

**Textiles.**—See Paper, etc.—Treasury Dept.

**Tiles (Ceramic).**—Florida Granite & Marble Co., 604 Ave. D, Miami, Fla.—Contemplates installing stock of ceramic tiles, etc., for mantels and bathroom floors, etc., and is interested in prices.

**Tin.**—Peter B. Murer, Nils Juelsgt, 9, Christiania, Norway.—Interested, view to representation, in tin.

**Tools.**—Antonio Aran, Oribau 158, Barcelona, Spain.—Interested, view to representation, in tools (files, saws, chisels, etc.).

**Trucks (Motor).**—H. J. Moore, Sweetwater, Tenn.—Second-hand 5-ton motor

truck and 3-ton truck; standard make; condition guaranteed.

**Tubing.**—Navy Dept., Bureau Supplies and Accounts, Saml. McGowan, Paymaster-Gen., Washington, D. C.—Bids until March 2 on 2500 ft. steel tubing, also miscellaneous steel boiler tubing, schedule 7926, delivery Navy-yard, Norfolk, Va.; schedules on application.

**Turpentines (Mineral and Wood).**—Peter B. Murer, Nils Juelsgt, 9, Christiania, Norway.—Interested, view to representation, in turpentines (mineral and wood.)

**Vault Door.**—Board Public Affairs, J. P. Faucette, Prest., Argenta, Ark.—Bids until Feb. 23 to furnish and install fireproof vault door. (See Electric-light Fixtures.)

**Vulcanizing Tools and Material.**—Bruce Gerdes, Silverton, Tex.—Vulcanizing tools and material for repairing automobile tires and tubes; give data and prices.

**Vulcanizers.**—B. D. Snyder, Box 34, Hedgeville, W. Va.—Correspondence with manufacturers of "Instant Vulcanizer."

**Waterworks.**—Comms. Public Works, Walterboro, S. C.—Will receive bids in from 30 to 90 days for water-works; 2,500,000-gal. pump capacity; 8 and 6-in. mains, with valves and hydrants; brick building; 2 fire service pumping engines and 1 service pump; reservoir of reinforced concrete, with concrete cover, capacity 100,000 to 150,000 gals.; water to be secured from large artesian well; bids for well to be received in about 60 days; H. S. Jaudon Engineering Co., Engrs., 408 Southern Bank & Trust Bldg., Savannah, Ga.

**Waterworks.**—City of Notasulga, Ala.—Bids until March 2 to install water-works; includes 80,000 U. S. gal.-capacity tank on tower, 80,000 gal.-capacity surface reservoir, about 3 mi. cast iron pipe line, power-house complete, 500-gal.-per-min. pump, 25 H. P. gas engine, and boring deep well; plans and specifications on application to Edgar B. Kay, Engr., Tuscaloosa, Ala., on payment \$5.

**Well-drilling Machinery.**—Florida Colonization Co., C. W. Vredenburg, 228 South Ave., Rochester, N. Y.—Well-drilling machinery; for use in Florida.

**Well Supplies (Gas and Oil).**—A. D. Powers, Seadrift, Tex.—Addresses of manufacturers of oil and gas well supplies.

**Wire Fencing.**—Florida Colonization Co., C. W. Vredenburg, 228 South Ave., Rochester, N. Y.—Wire fencing; for use in Florida.

**Woodworking Machinery.**—See Barrel Bung Machinery.—Dixie Lumber Co.

**Woodworking Machinery.**—Florida Colonization Co., C. W. Vredenburg, 228 South Ave., Rochester, N. Y.—Sawmills, planers, stickers, mission furniture machinery, etc.; for use in Florida.

**Woodworking Machinery.**—See Barrel Machinery.

**Woodworking (Stave and Barrel) Machinery.**—Harlan-Morris Mfg. Co., Corinth, Miss.—Now receiving bids on machinery for sawmill and for manufacturing tight and slack barrel staves and heading at Jackson, Tenn.

**Wool Waste, etc.**—Panama Canal, F. C. Boggs, Gen. Purchasing Officer, Washington, D. C.—Bids until Mar. 8 to furnish wool waste, oakum, rock salt, coal tar, carbon bisulphide, sal soda, red lead, paints, turpentine, varnish and shellac; blanks and general information relating to this circular (No. 902) may be obtained from this office or offices of assistant purchasing agents, 24 State St., New York; 614 Whitney-Central Bldg., New Orleans, and 1066 North Point St., San Francisco; also from U. S. Engr. offices in Seattle, Los Angeles, Baltimore, Philadelphia, Pittsburgh, Boston, Buffalo, Cleveland, Cincinnati, Chicago, St. Louis, Detroit, Milwaukee, St. Paul, Chattanooga, Louisville, Mobile and Galveston; Commercial Club, Kansas City, Mo.; Chamber of Commerce, Quincy, Ill., and Commercial Club, Tacoma, Wash.

**Yellow Canes.**—Peter B. Murer, Nils Juelsgt, 9, Christiania, Norway.—Interested, view to representation, in yellow canes.

## To Develop Oklahoma Asphalt.

Referring to plans for developing Oklahoma asphalt, John D. Townsend of Philadelphia, Ark., writes to the MANUFACTURERS RECORD as follows:

"I am interested in an 800-acre tract of asphalt land near Jumbo, Okla. Our property is within a quarter of a mile of the Choctaw asphalt mines, near Jumbo, now operated by the Barber Asphalt Co. under a 30-year lease from the Government. We have what is known as the

Choctawite or Grahamite asphalt, classed as pure forms of asphalt. We expect to put in a modern equipment for developing and mining at a cost of \$10,000, and a manufacturing equipment, at a cost of \$30,000, for manufacturing asphalt roofing, paints and varnishes. We also have in mind adding other equipments as may prove profitable in the manufacture of by-products. We have about 40 men interested in the enterprise, and have elected our executive board, consisting of W. Lee Brown of Elkhorn Bank; W. T. Gullede, automobile and lumber dealer; John D. Townsend, corresponding secretary and manager."

## FINANCIAL NEWS

### FINANCIAL CORPORATIONS

Ala., Huntsville.—A new bank is being organized by local parties and business is expected to begin about July 1 with \$100,000 capital. The new institution will probably be called the Farmers and Merchants' Bank.

Ala., Piedmont.—Farmers and Merchants' Bank has made application to organize; capital \$15,000; incorporators, C. N. Thompson, J. W. Strange, W. A. Woods, I. Adelstein, J. F. Morgan, Steinberg Bros., W. B. Penney, J. H. Barlow, C. T. Wallace, L. Journey and others.

Fla., Kissimmee.—First National Bank has made application for charter; capital \$50,000; organizers, George Singletary, E. L. Lesley and Rull Bass of Kissimmee, and Robt. Ilyer and Wm. Davis of Orlando.

Fla., Monticello.—First National Bank of Monticello approved; capital \$30,000; organizers, Geo. B. Glover, O. Z. Olin, Elizabeth A. Olin, R. C. Simpson and E. B. Palmer.

Ga., Pineora.—Salzburger Bank is chartered; capital \$25,000. Incprts.: L. Neidlinger of Guyton and Wm. L. Gignilliat, E. L. Exley and A. J. Bush of Pineora.

Ky., Madisonville.—A new bank capitalized at \$25,000 is to be organized and business is expected to begin about Apr. 1. P. B. Ross will be Prest. Among the stockholders are Walter Dulin, Judge Dempsey, Geo. Rash, Jas. R. Rash, Dr. Gardiner and Walter Gatlin.

La., Crowley.—First National Bank of Arcadia Parish has begun business; capital \$50,000; surplus \$12,500. Wm. L. Trimble, Prest.; Philip J. Chappuis, V.-P. and Cash. This succeeds the First National Bank of Crowley.

Md., Ridgely.—Plans are being made by H. D. Heironimus of Davis, W. Va., to organize a new bank at Ridgely.

Miss., Durant.—People's Bank of Durant, which represents a consolidation of the Bank of Durant and the People's Bank, has \$26,750 capital and \$8000 surplus; R. L. Cooper, Prest.; Dr. R. E. Howard, V.-P.; C. Hunoldstein, Cash.

Mo., Harwood.—A new bank is reported being organized by Judge J. N. Staten and others.

Mo., St. Louis.—New Age Building and Loan Assn, capital \$100,000, is incptd. by F. L. Williams, A. N. McMahon, H. S. Ferguson, C. H. Turner, Edw. D. Hamilton, W. E. Officer, Jr., E. K. Morrison, J. M. Langston, J. W. Myers, John R. Pinckett, J. G. Tyler and others.

Okla., Oklahoma City.—United States Investment Co. incptd., capital \$5000; incorporators, J. H. Beckham, Jr., Victor Swanson, A. V. Beckham, Oklahoma City.

Okla., Cheyenne.—Miller-Baird Abstract Co. chartered; capital \$10,000; incprts., T. M. Miller, Oklahoma City; R. F. Baird and Kate Baird, Cheyenne.

Okla., Henryetta.—Citizens' Bank (a consolidation of the Citizens' Bank and the Guaranty State Bank) is chartered; capital \$25,000; surplus \$4500; J. E. Whitenton, Prest.; W. L. Sullivan, V.-P.; T. E. Keggin, Cash.; F. J. Kersting, Asst. Cash.

S. C., Pinewood.—Bank of Pinewood has absorbed the Bank of South Carolina. R. A. Ridgill is cashier.

S. C., Chester.—Citizens' National Bank chartered; capital \$50,000; M. S. Lewis, Prest.; K. H. White, Cash. This succeeds the Citizens' Bank of Chester.

Tex., Big Springs.—West Texas Loan Co. chartered; capital \$25,000; incorporators, W. P. Edwards, J. A. Haller and Robert Piner.

Tex., San Antonio.—King Loan Co. incptd., capital \$5000; incorporators, Richard H. Kuehn and J. J. Heibron.

Tex., Spur.—City National Bank is chartered; capital \$40,000; G. H. Connell, Prest.; E. C. Edmonds, Cash. This is a conversion of the First State Bank.

Tex., Waller.—A State bank capitalized at \$10,000 is being organized by C. H. Umland. (Previously reported under Walker, Tex.)

Tex., Winters.—First National Bank has made application to organize; capital \$25,000; organizers, D. M. Hillyard, Henry James, W. C. Franklin, J. Rogers and W. R. Keeble.

Va., Lexington.—Rockbridge National Bank, a conversion of the Bank of Rockbridge, began business Feb. 4; capital \$150,000; surplus \$37,500; Paul M. Penick, Prest.; W. C. Stuart, V.-P.; S. A. Campbell, Cash.; A. P. Wade, Asst. Prest.

Va., Roanoke.—United Loan Co. Incptd.; capital \$10,000 to \$25,000; M. J. Schlossberg, Prest.; E. B. Schlossberg, Secy. and Treas.

W. Va., Grafton.—Citizens' National Bank has made application for charter; capital \$100,000; organizers, E. B. Jenkins, J. F. Willson, A. G. Mason, H. M. Murray and E. W. Doll.

## NEW SECURITIES

Ala., Athens.—The \$25,000 6 per cent. floating-debt bonds recently voted were purchased by an Ohio firm at par. Ernest Hine is Mayor.

Ala., Bay Minette.—\$3500 5 per cent. 20-year \$500 water, sewer and light bonds have been purchased at par by Sullivan, Long & Hagerty.

Ala., Huntsville.—Bids will be received until noon Feb. 23 by W. T. Lawler, Probate Judge of Madison County, for \$85,000 5 per cent. courthouse and equipment bonds.

Ala., Montgomery.—House of Representatives has passed a bill authorizing the State to issue \$1,300,000 of bonds to pay off floating indebtedness. Address The Governor.

Ark., Leslie.—\$25,000 6 per cent. 10-30-year school bonds have been sold by the School Board to Gunter & Sawyer, Little Rock.

Ark., Leslie.—Bonds for sewerage and water systems are voted. Address The Mayor.

Ark., Little Rock.—\$4500 of improvement bonds Sewer Dist. No. 69 have been sold to a New York banking firm. Address The Mayor.

Ark., Little Rock.—Election is to be held April 14 to vote on \$150,000 5 per cent. 1-30-year municipal bonds. Address Mayor Taylor.

Ark., Marianna.—\$25,000 6 per cent. bonds Special Road Improvement Dist. No. 1, Lee county, have been sold at par to W. R. Compton & Co., St. Louis.

Ark., Wynne.—Cross county has voted \$100,000 of road bonds. Address County Commrs.

Fla., Bartow.—All bids received Jan. 26 for \$3000 Davenport Dist. No. 38 Polk county school bonds were rejected. C. A. Parker is Supt. Board of Public Instruction.

Fla., Bartow.—Bids will be received until 11 A. M. March 2 for \$15,000 5 per cent. 20-year bonds Special Tax School Dist. No. 6, Polk county. J. C. Owens is Chrmn. Board of Public Instruction, Polk county.

Fla., Bradentown.—\$100,000 of 6 per cent. 3-5-year improvement bonds have been sold at 95 and accrued interest to Hanchett Bond Co., Chicago.

Fla., Brooksville.—Bids will be opened Mch. 6 for \$250,000 5 per cent. funding and highway bonds; dated Mch. 6, 1915; maturing Mch. 1915. H. D. Evans is Chrmn. Board of County Commrs. H. H. Snow is Clerk. Further particulars will be found in the advertising columns.

Fla., Fort Meade.—Petition is to be circulated to bond Fort Meade Subschool Dist. for \$25,000 for purpose of building school and paying off floating debt. Address Board of Trustees.

Fla., Jacksonville.—\$65,000 of street and city hall bonds have been sold. William H. Meyer is Mayor.

Fla., West Palm Beach.—Election is to be held Mch. 23 to vote on \$800,000 Palm Beach county road and bridge bonds. Address County Commrs.

Fla., St. Petersburg.—Election is to be held to vote on \$15,000 Green Springs School Dist. school bonds. Address Board of Trustees.

Ga., Decatur.—Election is to be held Mch. 29 to vote on \$25,000 school, \$7000 water-works and \$18,000 sewer 5 per cent. 30-year \$1000 bonds; dated July 1, 1915. F. T. Hopkins is Mayor and G. H. Gibbs City Clerk.

Ga., East Lake (P. O. Atlanta).—Election is to be called to vote on bonds for school, sewers and water. Address The Mayor.

Ga., Macon.—Board of Education is taking steps for a bond election on \$300,000 school-improvement bonds. C. H. Bruce is Supt.

Ga., McCaysville (P. O. Epworth).—Election is to be held Feb. 20 to vote on \$10,000 20-year school bonds; interest not to exceed 7 per cent. J. E. Adams is Mayor and A. J. Brown Clerk of Council.

Ga., Rome.—\$75,000 municipal building and \$25,000 hospital 4 per cent. 10-30-year \$1000 bonds are voted. J. D. Hanks is Mayor and Hugh McCrary City Clerk.

Ky., Corbin.—\$5000 6 per cent. 10-year electric-light bonds were sold to Well, Roth & Co., Cincinnati, at \$5210 and accrued interest; denomination \$1000; dated Jan. 1, 1915; maturity Jan. 1, 1925.

Ky., Horse Cave.—\$4000 school bonds are being offered. Address T. A. Dunagan, Chrmn. School Board.

Ky., Lancaster.—\$15,000 6 per cent. 5-15-year \$1000 Garrard county courthouse-repair bonds were purchased Feb. 9 by Elston Clifford & Co., Chicago, at \$16,031. Address W. F. Champ, County Commr.

Ky., Louisa.—Election is to be held in Lawrence county March 15 to vote on \$100,000 road and bridge bonds. Address County Commissioners.

Ky., Morgantown.—No sale was made of the \$17,290.92 of 6 per cent. 10-year street-improvement bonds offered Feb. 10. A. F. Waller is City Clerk.

Ky., Pineville.—\$250,000 30-year Bell county road bonds were voted Feb. 13. Address County Commrs., W. C. Bingham, County Clerk.

La., Alexandria.—Bids will be opened Mch. 29 for \$100,000 5 per cent. 10-year \$1000 bonds Road Dist. No. 2, Rapides parish; dated Apr. 1, 1915. Address J. P. Turregano, Chrmn. Finance Committee.

La., Bastrop.—\$10,000 water and light bonds are voted; also \$40,000 additional bonds for 40 years to improve present plant. Address The Mayor.

La., Plaquemine.—Bids will be opened soon after Mch. 20 for \$10,000 5 per cent. school district building bonds, voted Jan. 19, 1915. Address L. E. Messick, Secy. School Board.

Miss., Greenville.—\$65,000 high-school bonds are reported sold. Address Board of Education.

Miss., Hazlehurst.—Copiah county good-roads bonds are voted. Address County Commrs.

Miss., Hickory.—\$10,000 6 per cent. 20-year school bonds, dated May 1, 1914, have been purchased by John Nuveen & Co., Chicago, at par and interest.

Miss., Pittsboro.—Calhoun county wants to borrow \$18,000, payable Jan. 1, 1916; interest 6 per cent. Address Dennis Murphree. Further particulars will be found in the advertising columns.

Miss., Waynesboro.—On Mch. 1 Wayne county will offer \$1200 6 per cent. 10-20-year consolidated school bonds. W. A. Bodl is Chancery Clerk of Wayne County. Further particulars will be found in the advertising columns.

Mo., Caruthersville.—Bids will be received until 7 P. M. Feb. 22 by J. M. McGinnis, City Clerk, for \$32,000 sewer bonds, dated March 1, 1915, and \$30,000 water-works bonds, dated March 15, 1915; interest 5 per cent.; denomination \$500. Bonds were voted Jan. 26 and mature March 1, 1920 to 1935, inclusive.

Mo., Chillicothe.—A dispatch to the Manufacturers Record says that \$135,000 5 per cent. 20-year water-works bonds are voted. Stephen Hawkins is Mayor.

Mo., Kennett.—Election is to be held March 2 to vote on \$7000 of water-works bonds. Clyde Oakes is Mayor.

Mo., New Madrid.—Bids will be received until 1 P. M. March 16 for \$40,000 courthouse and \$10,000 jail \$500 bonds. S. R. Hunter, Jr., is County Treas.

N. C., Andrews.—\$10,000 5½ per cent. 30-year school district bonds were purchased Jan. 30 by A. J. Hood & Co., Detroit, Mich., at \$10,025.

N. C., Mt. Airy.—Application is to be made to the Legislature for authority to issue \$20,000 school bonds. Address Board of Education.

N. C., Raleigh.—City is considering the question of issuing \$50,000 of bonds, proceeds to be devoted to street improvements. Address Mayor Johnson.

N. C., Raleigh.—\$100,000 6 per cent. street bonds have been sold to Sidney Spitzer & Co., Toledo, O., at par.

N. C., Rowland.—\$10,000 additional water-works bonds are to be issued. \$40,000 of bonds were issued for this purpose last

spring. Address Board of Commrs., Civic Improvements.

N. C., Sanford.—Bids will be received until noon March 2 for \$100,000 5 per cent. 40-year Lee county road-improvement bonds voted Jan. 16; denomination \$100, \$500 and \$1000. Address J. M. Harrington, Secy. Highway Com., care A. A. F. Seawell, Atty. for Highway Com.

N. C., Yadkinville.—Election to vote on \$200,000 Yadkin county road bonds will be held Mch. 25. Address County Commrs.

N. C., Westfield.—On account of error in registration of both Westfield and Long Hill townships, Surry county, the election called for Feb. 10 to vote on \$40,000 of road bonds was not held. J. B. Sparger is Chrmn. County Commrs., Mt. Airy, N. C.

N. C., Wilson.—City proposes to issue \$95,000 water, \$75,000 gas plant, \$30,000 electric plant and \$30,000 street-improvement bonds. Address The Mayor.

N. C., Wilmington.—Bill is to be introduced in the Legislature providing for an election in May to vote on \$100,000 electric-lighting-plant bonds. Address The Mayor.

Okla., Kiefer.—\$60,000 6 per cent. water-works bonds, maturing 1935, have been purchased by Southern Construction Co., Kansas City, Mo., contractor for the work.

S. C., Columbia.—The proposed issue of \$1,250,000 of Richland county road and bridge bonds are 40-year 5 per cents. W. D. Melton is Chrmn. Board of Commrs.

S. C., Union.—Election is to be held in Union county April 6 to vote on \$300,000 5 per cent. road bonds. Address County Commissioners.

S. C., Woodruff.—\$60,000 5 per cent. 20-40-year water and sewer bonds are reported purchased by a Spartanburg broker. J. E. Ezell is Town Clerk.

Tenn., Bristol.—Application has been made to the Legislature for authority to vote on \$60,000 of high-school building bonds, but it is not contemplated to hold the election or offer the bonds for sale this year. Paul Harrell is Secy. Board of Education.

Tenn., Dover.—\$100,000 Stewart county road bonds defeated.

Tenn., Jellico.—Bids will be received until noon March 2 for \$150,000 30-year Campbell county road bonds; denomination \$100 to \$1000; interest not to exceed 5 per cent. Address A. B. Mahan, Secy. Board of County Commrs. at Jellico (not Jacksboro, as reported in last issue of Manufacturers Record).

Tenn., Knoxville.—Knox county proposes to issue \$500,000 road bonds. Address County Commissioners.

Tenn., Maryville.—\$300,000 5 per cent. 10-35-year Blount county pike bonds are voted. Address County Commrs.

Tenn., Nashville.—Bids were received until 10 A. M. Feb. 16 by J. W. Dashiell, Secy. Board of Commrs., for \$978,000 5 per cent. refunding bonds.

Tenn., Rives.—\$10,000 6 per cent. 10-30-year school bonds have been purchased by Kissel, Kinnicutt & Co., Chicago, at par less attorney's fees.

Tex., Austin.—The Attorney-General has approved the following securities: \$2000 5 per cent. bonds Limestone County Common School Dist. No. 13; \$75,000 5 per cent. 40-year bonds Road Dist. No. 3, Navarro county; \$5000 5 per cent. 10-40-year water-works improvement bonds, Lott; \$4000 5 per cent. 10-20-year Grand Saline water-works bonds; \$2000 5 per cent. 20-year bonds Tarrant County Common School Dist. No. 17; \$25,000 5 per cent. 15-40-year bonds Wichita Falls City Hospital; \$3000 5 per cent. 10-20-year bonds Bosque County Common School Dist. No. 35; \$30,750 5 per cent. Sulphur Springs street-improvement bonds.

Tex., Austin.—The State Board of Education has purchased school district bonds aggregating \$77,400, as follows: Bellville Independent School Dist., \$7500; Pottsville, \$6500; Omon, \$1000; Joaquin, \$4000; Bosque County Common School Dist. No. 3, \$7500; Falls County No. 37, \$1500; Fannin County No. 18, \$1600; Fannin County No. 45, \$1000; Grayson County No. 72, \$10,000; Milam County No. 50, \$12,000; McCulloch County No. 11, \$7000; Nueces County No. 2, \$8000; San Augustine County No. 4, \$900; San Augustine County No. 13, \$300; San Augustine County No. 18, \$1000; Liberty County No. 13, \$9000.

Tex., Barstow.—Contractors of Ward County Irrigation Dist. No. 1 are offering for sale \$340,000 6 per cent. bonds. Address Baker Mfg. Co., Sweetwater, Tex.

Tex., Brookshire.—\$25,000 5 per cent. 10-40-year \$1000 road district bonds are being offered. Address C. J. Rhemann, Commr. Further particulars will be found in the advertising columns.

Tex., Corsicana.—Election will probably be held to vote on \$100,000 school, street and sewer bonds. Address The Mayor.

Tex., Denton.—\$75,000 school, \$10,000 street, \$12,000 water-works and \$15,000 fire department 5 per cent. 10-40-year \$1000 bonds were voted Feb. 2; dated Apr. 1, 1915. W. L. Foreman is Mayor.

Tex., Denton.—\$22,500 5 per cent. 40-year Road Dist. No. 3, Denton county, road bond issue, authorized last spring, has been repealed. S. H. Hoskins is County Judge.

Tex., Franklin.—Bids will be received until 2 P. M. March 5 for \$100,000 5 per cent. 10-40-year road bonds Justice's Precinct No. 3, Robertson county. \$50,000 are dated Jan. 1, 1913, and \$50,000 Jan. 1, 1915. J. L. Goodman is Judge of Robertson County.

Tex., Karnes City.—Application has been made to the Karnes County Court asking that an election be called to vote on \$300,000 Precinct No. 1 road bonds. Address County Commrs.

Tex., Kountze.—Election is soon to be held, it is reported, to vote on \$150,000 bonds Road Dist. No. 1, Hardin county. Address County Commrs.

Tex., Port Lavaca.—Election is soon to be held to vote on \$60,000 of Seadrift Road Dist., Calhoun county, bonds. Address County Commrs.' Court.

Tex., San Antonio.—\$24,000 5 per cent. 10-30-year bonds Bexar County Common School Dist. No. 18 have been purchased by Cutter, May & Co., Chicago, at par and interest, less \$480 for commission and expenses. \$30,000 Dist. No. 25 and \$20,000 Dist. No. 41, Bexar county, school bonds have also been sold. P. F. Stewart is Supt. County School Board.

Tex., San Benito.—Election called for Feb. 2 to vote on \$5000 sewer and \$3000 street-improvement 6 per cent. 10-40-year bonds is postponed until Mch. 2. Bruce Frazer is City Secy.

Tex., Shamrock.—\$15,000 5 per cent. 10-40-year water bonds were purchased by the Commonwealth Trust Co., Houston.

Tex., Sherman.—Petitions are being circulated in Grayson county calling for an election to vote on \$900,000 road bonds. Address County Commrs.

Tex., Taylor.—Election is to be held March 18 to vote on \$100,000 5 per cent. 40-year street-paving bonds. Address Board of City Commissioners.

Va., Gate City.—Election is to be held Mch. 9 to vote on \$68,000 Taylor Dist., Scott county, road bonds. Address County Commrs.

Va., Gladys.—Steps are being taken to call an election to vote on \$25,000 improvement bonds. Address The Mayor.

Va., Radford.—\$12,500 5 per cent. 30-year bridge bonds were voted Feb. 9. Address Wm. Ingles.

Va., Lebanon.—School Board has filed petition with Board of Supervisors Lebanon county asking for election to vote on \$30,000 bonds.

Va., Richmond.—Finance committee is considering bond issue.

W. Va., Moundsville.—Mch. 6 election is to be held to vote on \$50,000 Union Dist. public-improvement bonds. Address Board of Commissioners.

W. Va., Parkersburg.—Bids will be received until 3.30 P. M. Mch. 11 for \$300,000 5 per cent. 10-year \$100, \$500 and \$1000 paving and sewer bonds, dated June 1, 1915; W. H. Smith, George E. Work, Edward Nelly and Charles A. Bukey, Bond Commrs.

W. Va., Parkersburg.—\$250,000 5 per cent. 10-34-year district school bonds are voted; denominations \$100, \$500 and \$1000; dated June 1, 1915. Bids for same will be received until 2 P. M. Feb. 20. C. E. Van Deventer is Prest. School Board.

W. Va., Welch.—Election is to be held Mch. 20 to vote on \$165,000 5 per cent. Big Creek Dist., McDowell county, road bonds; denomination not less than \$100 nor more than \$1000; dated May 1, 1915; payable May 1, 1924, or 20 years from date thereof; W. W. Whyte is Clerk.

## FINANCIAL NOTES

The Maryland State Bankers' Association has chosen Cape May, N. J., for the place and June 22, 23 and 24 next for the time of its annual convention. The association met there last year.

The North Carolina Association of Life Underwriters, in its annual convention at Charlotte, N. C., elected for the ensuing year A. J. Williford of Raleigh, Prest.; H. M. Humphrey of Goldsboro, Vice-Prest., and Rufus Y. McPherson of Raleigh, Secy. and Treas. Next year the annual convention will be held at Raleigh.



**Merchants-Mechanics National Bank**  
South and Water Sts. BALTIMORE, MD.  
DOUGLAS H. THOMAS, President  
JNO. B. RAMSAY, V.-P. and Chm. Bd. of Dir.  
JOHN B. H. DUNN, Cashier.  
Capital \$2,000,000 Deposits \$21,670,000  
Surplus and Profits \$2,175,000  
Accounts of Banks, Bankers, Corporations and Individuals solicited.  
We invite correspondence.

Edwin Warfield, President

**Fidelity and Deposit Company of Maryland**  
Home Office: Baltimore  
Total Assets over \$11,000,000.00

All Kinds and Classes of Surety Bonds and Casualty Insurance

Largest and Strongest Surety and Casualty Company in the World

**GO SOUTH!**  
**FOR SALE** Timber, Coal, Iron, Ranch and Other Properties  
Southern States, West Indies, Mexico  
GEO. B. EDWARDS, (Broker)  
Tribune Building NEW YORK, N. Y.  
Confidential Negotiations, Investigations, Settlements, Purchases of Property

**POWELL, GARARD & CO.**  
39 S. La Salle Street  
CHICAGO, ILL.

We buy Southern Municipal Bonds (County, City, School, Road and Drainage District)

## CHECK BOOKS

Look at the imprints on checks passing through your office. If you are south of Mason and Dixon's Line and East of the Mississippi River, you will find more of our imprints than of any other. Of course there is a good reason. When needing check books consult

**Young & Selden Co.**

**BANK STATIONERS BALTIMORE, MD.**  
Lithographing, Printing, Envelopes  
Blank Book Makers, Book Binding  
Letter Heads, Office Supplies  
Steel Die Work

## Delaware Trust Company

Wilmington, Delaware

INCORPORATING under broad, liberal, safe and stable Delaware laws. A fully equipped department for proper organization and registration of corporations. **BANKING AND TRUST** department gives special attention to out of town customers' accounts. **TITLE DEPARTMENT** examines and guarantees title to realty throughout Delaware. **REALTY DEPARTMENT** has sites for manufacturing industries. Modern Methods of management of property.

J. ERNEST SMITH, President and Gen. Counsel  
WM. G. TAYLOR, Vice-Pres. and Treasurer.  
HARRY W. DAVIS, Vice-Pres. and Secretary  
W. W. PUSEY, 2d. Title and Real Estate Officer

## The National Exchange Bank

OF BALTIMORE, MD.

Hopkins Place, German and Liberty Streets  
Capital, \$1,000,000  
August 9th, 1913, Surplus and Profits, \$764,091.00

**OFFICERS**  
WALDO NEWCOMER, President.  
SUMMERFIELD BALDWIN, Vice-Pres.  
R. VINTON LANSDALE, Cashier.  
C. G. MORGAN, Asst. Cashier.

Accounts of Mercantile Firms, Corporations, Banks, Bankers and Individuals Invited.

## The First National Bank

OF KEY WEST, FLA.

United States Depository and Disbursing Agent.  
Capital - - - - - \$100,000  
Surplus and Undivided Profits - - - - - 40,000  
A general banking business transacted  
Special attention given to collections.

## JOHN NUVEEN & CO.

First National Bank Building  
CHICAGO

We purchase SCHOOL, COUNTY and MUNICIPAL BONDS. Southern Municipal Bonds a Specialty.

Write us if you have bonds for sale.

## FIRST NATIONAL BANK

RICHMOND, VIRGINIA

Capital and Surplus, - - - \$3,000,000

JNO. B. PURCELL, President  
JNO. M. MILLER, Jr., Vice-Pres.  
W. M. ADDISON, Cashier

## We Buy Bonds

City, County, School and Road, from Municipalities and Contractors

**WRITE**  
**THE PROVIDENT SAVINGS BANK & TRUST CO.**  
CINCINNATI OHIO

**5000—\$9.75**

**U. S. BANK BOND LETTERHEADS**  
Attractively printed, boxed, shipped prepaid any point east of Mississippi. Envelopes to match at same price. Send postal for samples.  
**SOUTHWEST VIRGINIA ENTERPRISE**  
Wytheville, Virginia

## A FORTUNE TO THE INVENTOR

who reads and needs it, is the possible worth of the book we send for 6c. postage. Write us at once.

R. S. & A. B. LACEY Dept. 5 Washington, D. C.

## Your chance to open up a new market for your goods in SOUTH AMERICA

If interested, write at once to

FRIEDR. W. LUTZ RICHMOND, VA.  
Personal Representatives in Brazil and the Argentine Republic.

## York Safe and Lock Company

MANUFACTURERS OF

**SAFES and VAULTS**  
YORK, PA. BALTIMORE, MD.

—WILSONS—

**STEEL ROLLING DOORS WOODEN ROLLING PARTITIONS**

J. M. VAN HARLINGEN, Southern Agent, Candler Bldg., ATLANTA, GA.

—TERRELLS—

**METAL LOCKERS METAL SHELVING**

## MACHINERY and SUPPLIES

BELTING AND PACKING

**TRANSMISSION and CONVEYING**  
SMITH-COURTNEY CO. - RICHMOND, VA.

## We Finance

Electric Light, Power and Street Railway Enterprises  
With Records of Established Earnings

## We Offer

Bankers and Investment Dealers  
Proven Public Utility Securities  
Correspondence Solicited

## Electric Bond and Share Company

(Paid-up Capital and Surplus, \$12,500,000)

71 Broadway New York

## COTTON YARNS

Paulson, Linkroom & Co.

COMMISSION MERCHANTS

NEW YORK PHILADELPHIA CHICAGO  
87-89 Leonard Street 120 Chestnut Street 206 S. Market Street

## The Cutler Mail Chute

A recognized necessity in modern buildings of the office, hotel and apartment class.

Send for circulars and full information to the sole makers.

CUTLER MAIL CHUTE CO. Rochester, N. Y.

## We Buy City, County School and Drainage BONDS

FROM MUNICIPALITIES OR CONTRACTORS

We are in position to pay HIGHEST PRICES. Write or wire us your offerings.

THE NEW FIRST NATIONAL BANK Assets, \$8,000,000 COLUMBUS, O.

## WATCHMAN'S CLOCKS

Approved by all Insurance Companies  
WILL POSITIVELY KEEP YOUR NIGHT WATCHMAN AWAKE

FULL INFORMATION

**Watchman's Clock & Supply Co.**

C. A. NANZ 9 Church Street NEW YORK

## To Manufacturers and Capitalists

Contemplating the Establishment of Industrial Enterprises

Attention is called to the exceptionally favorable location of

## NEWPORT NEWS, VA.

on Hampton Roads, fifteen miles from the sea. Deep water, railway and sea transportation facilities unrivaled. Climate salubrious. Apply to

W. B. LIVEZEY, President OLD DOMINION LAND COMPANY NEWPORT NEWS, VA.

## Capital for Southern Industries

**Peabody, Houghteling & Co.**

(Established 1865)

10 So. La Salle Street CHICAGO, ILLINOIS

## Temporary Financing of States, Cities and Counties Pending Issuance of Bonds

ALSO ENTIRE ISSUES OF BONDS PURCHASED

Largest Capital and Surplus of Any Financial Institution in Maryland or Any Southern State

Established 1864

Resources Sixteen Millions

**MERCANTILE TRUST AND DEPOSIT COMPANY**  
OF BALTIMORE

A. H. S. POST, President

F. G. BOYCE, Jr., Vice-President

# Classified Opportunities

## MEN WANTED

**SALESMEN CALLING ON SAWMILLS.** etc., wanted in every State by established manufacturer; big commission; samples carried in pocket; prices lower and goods better than others; well and favorably known. You can more than make your expenses on this. Reference required. R. H. Wilson, Sales Mgr., 325 Locust St., St. Louis, Mo.

**ENGINEERING REPRESENTATIVES.**—Agents with offices in all parts of the United States to represent the Thomas Method of reinforced concrete bridge construction. W. M. Thomas, 915 Hibernian Bldg., Los Angeles, Cal.

**WANTED**—Practical tinner with few hundred dollars to accept permanent position with us as shop manager; work simple. Address T. W. Glover, Tubular Bucket Company, Guntersville, Alabama.

**WANTED**—Man to take full charge of stone quarry and mill who knows plans and can estimate cut-stone work. Investment of \$14,000 required for two-fifths interest. Address Box 633, Morehead, Ky.

**CONTEMPLETE** starting a knitting mill to manufacture children's socks and stockings. Anxious to discuss proposition with experienced mill manager controlling some capital and capable of taking charge. P. O. Box 1443, Atlanta, Ga.

**AGENTS WANTED** among supply dealers and salesmen for an exceptional house-lighting machine, suitable for small homes as well as large; simple, durable, economical; satisfaction guaranteed to customers; has excellent selling points; a live proposition. Write for terms. The Alexander N. Milburn Co., Baltimore, Md.

**SALES MANAGER.**—A Canadian farming implement mfg. corporation has an opening for experienced sales manager (preferably with experience in above line), to take full charge of sales department; attractive salary and commission contract guaranteed to right party; \$2500 cash investment and all references required. This is a high-grade proposition for a high-grade man. Investment fully secured. Correspondence treated strictly confidential. Address No. 1693, care Manufacturers Record, Balto., Md.

**FACTORY SUPERINTENDENT.**—Position vacant for a high-grade factory superintendent, with executive ability, to take full charge of all branches of a farming implement factory in Canada; applicant must be able to invest \$2500 cash and move at once to Ontario, Canada; contract with good salary guaranteed to right party; investment covered by guaranteed security. Address No. 1694, care Manufacturers Record, Balto., Md.

**TREASURER.**—Large mfg. corporation, established 1850, location Canada, has a vacancy for a highly efficient business man as secretary and treasurer; party must be able to invest at least \$5000 cash and give best of references as to ability and character; contract with good salary guaranteed to right party; investment absolutely secured; answer in full or no attention paid. Address No. 1695, care Manufacturers Record, Balto., Md.

## AGENCIES WANTED

**MIDDLE-AGED MAN**, without funds, sober and industrious, well recommended as to character and habits, desires to act as manufacturers' agent in Washington and surrounding territory. Address James R. S. Dickens, P. O. Box 1209, Washington, D. C.

**WANTED**—Sales agency for all lines pertaining to builders' specialties; East Tennessee as territory; can furnish satisfactory references to interested concern; modern warehouse facilities. Address Daniel Briscoe, Jr., 225-327 State St., Knoxville, Tenn.

## SITUATIONS WANTED

**WANTED.**—Credit Manager and Correspondent of experience and ability desires to make a connection with a large manufacturer or jobbing house. References and credentials gladly furnished. Address No. 1701, care Manufacturers Record, Balto., Md.

**HIGH-CLASS CONCRETE SUPT.** will accept position, \$50 week; can figure and handle contracts inside estimate; owner three valuable labor-saving patents; concrete roads and sidewalks; will give employer preference of introduction; only large contractors answered; references exchanged. A. J. P., 503 Springhill Ave., Mobile, Ala.

**POSITION** wanted by competent heating and ventilating draftsman; experienced in laying out plans and estimating contract work. Address 123 Tate St., Greensboro, N. C.

**CONTRACTOR'S SUPERINTENDENT**, 16 years' experience buildings, bridges, general construction, can please you. Address No. 1705, care Manufacturers Record, Balto., Md.

**AN EXPERIENCED** and capable coal man in the prime of life, knows the business from A to Z, wants a position; can handle an office, sell on the road, or manage a coal works; have sold coal and coke from Omaha to Boston and know the markets and transportation; have opened up coal works and disposed of the output; married man of family; temperate habits. Address No. 1638, care Manufacturers Record, Balto., Md.

## RATES AND CONDITIONS

Rate 20 cents per line per insertion. Minimum space accepted, four lines. Maximum space accepted, 25 lines. In estimating the cost, allow seven words of ordinary length to a line. When the advertisement contains a number of long words, proper allowance should be made. Terms: Invariably cash with order; check, postoffice or express order or stamps accepted. No display type used. Questionable or undesirable advertisements will not be accepted. The assistance of our readers in excluding undesirable advertisements is requested. We reserve the right to refuse any advertisement. No patent medicine, whiskey or mining stock advertisements accepted. Rate for special contracts covering space used as desired within one year as follows: 100 lines, 18c. per line; 300 lines, 15c. per line; 500 lines or more, 13c. per line.

**STRUCTURAL ENGINEER**, 18 years' experience in steel, concrete, general engineering and building construction, office and field, is open for position; best of references. Address No. 1692, care Manufacturers Record, Balto., Md.

**POSITION WANTED.**—Native-born American citizen, 31 years of age, married, just returned from South America, wishes to secure position as manufacturer's agent for representative in South American countries. Located over 4 years in Brazil, also in Uruguay, Argentine and Cuba. Speaks Portuguese, German and Spanish. Technical education. Can furnish references as to character and ability. Address No. 1697, care Manufacturers Record, Balto., Md.

## EDUCATIONAL

**RENSSELAER POLYTECHNIC INSTITUTE**, TROY, N. Y.—Courses in Civil, Mechanical, Electrical and Chemical Engineering and General Science, leading to the degree of Civil Engineer (C.E.), Mechanical Engineer (M.E.), Electrical Engineer (E.E.), Chemical Engineer (Ch.E.), and Bachelor of Science (B.S.). Also special courses. Splendidly equipped new engineering laboratories. Send for catalogue to Registrar.

## MODELS

**MODELS MADE FOR INVENTORS.**—General machine work. Designing and perfecting. Developing automatic devices and machinery. In a position to do all kinds of light to best machine work. Prices reasonable. Estimates cheerfully given. Ideal Machine Works, 64 Ann Street, New York City.

## MANTELS AND TILE FLOORS

**NORTHCROSS WOOD MANTELS AND TILE FLOORS** for every purpose. Sold direct from factory to your home. All orders receive prompt attention. Every contractor should have a copy of our new catalog showing the largest line in America. Mailed free. W. J. Northcross Mantel Company, 73 Union Ave., Memphis, Tennessee.

## CAPITAL WANTED

**WANTED**—Capital for manufacturing counter scales with simple device for placing weight by touching a button. Address No. 1703, care Manufacturers Record, Balto., Md.

## BUSINESS OPPORTUNITIES

**\$75 STARTS YOU IN BUSINESS** selling adjustable form units for all kinds of concrete work, earning from \$75 to \$150 weekly. Our \$150 outfit has a capacity equal to another one form to each size make, costing \$43.25. Act quick before your territory is gone. Frick Manufacturing Co., Fricks, Pa.

**FOR SALE**—Half interest limestone quarry, on R. R., in Alabama; lime 99% pure; rock inexhaustible; gravity proposition; good market for lime; concrete screenings; good freight rates. For full particulars write Theo. Poull, c/o Duncan Drug Co., Birmingham, Ala.

**BUSINESS BARGAINS.**—Light and ice plant for sale; paid 27 per cent. last year. \$50,000 national bank for sale, Texas. \$20,000 State bank for sale. Prosperity has returned to Oklahoma. Write us. Richardson Investment Co., Oklahoma City, Okla.

**WANTED**—To correspond with parties who have experience and some capital, in regard to establishing a knitting mill at Draper, Va. If interested, act at once. Address Lock Box 1, Draper, Va.

**SPANISH YOUNG MAN**, with own office down town, wishes to make arrangements with two or three manufacturers to handle their correspondence and shipments, charging \$4 per week. Highest references given. Address P. O. Box 2110, New York City.

**EXPERIENCED MAN** in farm land subdivision, having one of the best propositions in the South, would like to correspond with parties desiring to invest in safe, sound, legitimate proposition and assist in financing same. Address No. 1704, care Manufacturers Record, Baltimore, Md.

**TAX PROBLEM SOLVED.**—Confidential proposition submitted capitalists and property owners by letter suggesting highly profitable and absolutely safe investment free from burdensome taxation. Johnson's American & Foreign Real Estate Exchange, 926 Pennsylvania Ave., Washington, D. C.

**WANTED—PARTNER.**—A prominent, well-rated company has had some excellent tracts of timber placed with them for sale, and a good business man with \$10,000 cash could greatly assist in the handling of these properties. A number of manufacturers are in correspondence and badly in need of timber, but simply are waiting for the upward turn in the price of lumber before buying, and the right man could no doubt help bring some of these deals to a quicker conclusion. No brokers or theorists need answer, as only a level-headed man, one with a full knowledge of business conditions in general and lumber and timber in particular, is desired. Address No. 1702, care Manufacturers Record, Balto., Md.

**FOR SALE**—Hardware store, furniture and undertaking establishment, flour mill, farms and timber, factory sites, Md. and Penna. Write W. E. Anderson, White Hall, Md.

**WE OFFER FOR SALE** our building and repair material for buggies, cars, wagons and all other farm machinery, together with good set of tools. Fine territory and good-paying business. Agency for machinery that pays good profit. Also shop building. Owner has no time to give it is reason for change. Martin County Buggy Co., care of W. C. Manning, Williamston, N. C.

**WANTED**—A practical and experienced mill man to take financial interest in and manage a well-established yellow-pine door, sash and blind factory in Southern city of 60,000 population; only yellow-pine factory in city; paying proposition for right man. Address No. 1700, care Manufacturers Record, Balto., Md.

**WE ARE CONSULTING ENGINEERS** backed by a competent staff and a modern machine plant that can save you money if you are interested in designing or building special machinery, special tools, experimental work, models, etc. If you have patented an article which is not perfected, a consultation with our expert mechanician is at your command. We are giving attention to developing patents and marketing patented articles, especially labor-saving appliances. Our list of office appliances is available. We invite correspondence and will give estimates promptly and cheerfully. Specialty Manufacturing-Sales Corp., Norfolk, Va.

**PARTY** operating an iron-ore mine and making money on a limited output desires to interest someone who will furnish as needed \$10,000 for working capital and for equipping the mine with machinery to reduce the cost of production and increase the output to meet the growing demand for ore at advancing prices. Young, active man with mining experience or one with good business ability who is willing to learn and who will take charge of the mine preferred. Best references required and given. P. O. Box 10, Station "A," Chattanooga, Tennessee.

## FACTORY SITES

**FACTORY SITE, COLUMBUS, OHIO.**—One of the best in the city; 25 acres, or any part thereof, on centrally-located switch, in a large German settlement. Columbus is one of the best towns for factories in the United States, and its railroad facilities cannot be excelled. The laboring people are largely German, and men who have moved in from the country; practically no foreign element. All Columbus industries have grown to be large institutions. Our banks furnish any amount of capital that is required to finance, enlarge and develop business. The Chamber of Commerce is alive to the interests of its home industries. Last year it gave one of the most elaborate and successful industrial expositions that has ever been held in the United States. If you contemplate a location, let us hear from you. C. A. Thomas & Co., Brunson Bldg., Columbus, Ohio.

**FOR SALE**—Desirable Manufacturing Site, 150x500 feet. Rail and Water facilities best in State. I will exchange value for preferred stock. W. E. Veasey, Havre de Grace, Md.

**BALTIMORE FACTORY AND TERMINAL SITES.**—Statement of Asa G. Candier, President The Coca-Cola Co.: "Investigation convinced us that Baltimore is not only the commercial metropolis for Southern trade, but that it affords shipping opportunities both by water and rail for domestic and foreign traffic superior to any of the great cities in any section of the United States." Locate in Baltimore and derive these advantages. We can provide accommodations to meet your requirements. Wm. Martien & Co., 3 N. Calvert St., Baltimore, Md.

## INDUSTRIAL PLANTS FOR SALE

### MATTRESS FACTORY

**FOR SALE**—A complete mattress factory; original cost \$7500; will sell to quick buyer for \$2000. This is a big bargain to a party who wishes to engage in the mattress business. Address J. Lee Etheredge, Augusta, Ga.

### FACTORY BUILDING

**FOR SALE** at Muncie, Ind.—One-story brick factory building, 40x125; steam heat; electric power; Belt R. R.; cost \$6500; price \$3500. Terms. I. N. Bullington, Huntington, W. Va.

### FURNITURE FACTORY

**FOR SALE**—On easy terms, a \$30,000 furniture manufacturing plant with from \$20,000 to \$25,000 worth of raw and manufactured materials. Has a good established business. The man or firm that understands the furniture manufacturing business can secure a bargain. If interested, address Lock Box 608, Oxford, N. C.

## MINERAL AND TIMBER LANDS, WATER POWERS AND MISCELLANEOUS PROPERTIES

**35,000 ACRES** Tenn. hardwoods, also small tracts up to largest, in all Southern States. Cut-over lands, ranches, wildlands. If wanting to buy or sell, write me. I may supply your wants. W. W. Marmaduke, Washington, Ind.

**SEE OR WRITE ME.**—I have fine coal lands, kaolin, mica and other valuable mineral interests. Farm lands from \$2.50 per acre up to \$250 per acre. Lands for summer homes at the famous Chimney Rock, N. C. Lots any size. Come to the grandest country estate now macadam roads, in town. High and prominently located with beautiful view. Improved by a large dwelling, 14 airy rooms, all outbuildings in first-class condition. Dwelling is located in beautiful lawn overlooking private lake. This splendid property shows a net income of \$1400, and can be sold for \$25,000.

**FINE STOCK FARM**, Toga Co., New York, 1 1/2 miles station, 350 acres under cultivation, balance timber; 3 acres orchard; new 9-room dwelling, large basement barns, sheds, silo, running water. Will include 15 head grade and full-blood Holstein cattle. Price \$16,000. 136 acres, Norwich, N. Y. Beautiful country estate now macadam roads, in town. High and prominently located with beautiful view. Improved by a large dwelling, 14 airy rooms, all outbuildings in first-class condition. Dwelling is located in beautiful lawn overlooking private lake. This splendid property shows a net income of \$1400, and can be sold for \$25,000.

**315 acres**, Newaygo Co., Michigan, unimproved, on good roads and level, fine soil, adapted to the fruits and crops of this section. All in timber. Price only \$4000. Arthur M. Connor, Oxford Building, Washington, D. C.

### WATER POWER

**WATER-POWER FOR SALE.**—The fine water-power on Catawba River at Hickory, N. C., can be purchased, if at once, at almost any old price for immediate development. It is the only large water-power in the State now open for sale and development. For particulars address Z. B. Buchanan, Real Estate Agent, Box 448, Hickory, N. C.

### WHITE MARBLE QUARRY

**FOR SALE**—The whitest white marble in the country. The quarry is inexhaustible and is within 50 yards of a railroad. Address A. M. Hughes, 3310 Park Pl., Washington, D. C.

### LITHOGRAPH STONE

**FOR SALE—LITHOGRAPHERS' STONE.** 342 acres of land in one of the upper counties of Tennessee, containing unlimited quantities lithograph stone, located about 1 mile from railroad. Particulars about test of stone, etc., address Capt. W. N. Hughes, U. S. A., 523 1/2 Broadway, Nashville, Tenn.

### COAL LAND

**POCAHONTAS COAL LAND.**—To settle a copartnership will sell about 7000 acres of celebrated Pocahontas coal and timber land adjoining the Pocahontas Coal Company land in Mercer and Raleigh counties, West Virginia, very near Virginian and C. & O. railroad. Owner, Box 248, Hinton, W. Va.

### COAL AND TIMBER LANDS

**FOR SALE OR EXCHANGE**—24,000 acres of coal and timber land, located on the Frisco R. R. west of Birmingham, Alabama. Address H. H. Wefel, Jr., owner, Mobile, Ala.

### TIMBER LAND FOR SALE

**FOR SALE**—Large tract of timber in Virginia; 60 per cent. oak, 40 per cent. walnut and poplar. Address Lock Box 15, Bowling Green, Va.



# Classified Opportunities

## CROSSTIES AND PILING

**CONTRACTORS, ATTENTION!**—For long or short piling, or timber suitable for same, located on deep water on the Georgia coast, also crossties, of timber for same, correspond with H. K. Walker, Citizens' Trust Building, Savannah, Ga.

## TIMBER FOR SALE

**FOR SALE**—40,000,000 feet of good timber, with sawmill and complete outfit; very low freight rates to Gulf ports; very cheap and on easy terms. James A. Terry, Mobile, Ala.

**REAL TIMBER BARGAIN**—50,000,000 ft. 70% N. C. pine, poplar and cypress, all original growth; on Southern R. R. in South Carolina. Liberal terms and low price. J. P. Mulherin (owner), Augusta, Ga.

**FOR SALE**—Hardwood timber on 5000 acres of mountain land immediately on railroad; principally oak, chestnut, hemlock and poplar; pay for as cut and sold. Address North Carolina Talc & Mining Co., Hewitts, N. C.

## STOCK FARM

**FOR SALE AT BARGAIN**—10,000 acres, located in Baldwin county, Alabama, especially adapted for stock ranch, as same is covered with a luxuriant growth of our native grasses. Terms very reasonable; in fact, would require no cash if parties buying would fence and stock same and pay me interest on the purchase price. Address H. H. Wefel, Jr., owner, Mobile, Ala.

## COLONIZATION LANDS

**FOR SALE ON REASONABLE TERMS**—25,000 acres, located in South Alabama, especially desirable for a colonization proposition, as land begins within half mile of a very thriving town and no portion more than four or five miles from a railroad. Address H. H. Wefel, Jr., owner, Mobile, Alabama.

## COLONIZATION LAND WANTED

**LAND WANTED**—We have buyer for colonization tract in Southern fruit and truck belt; must be well suited for the purpose, well located and a bargain. Describe fully. Name lowest price. De Soto Land Co., Baton Rouge, La.

## NURSERY STOCK

**\$10,000 WORTH OF NURSERY STOCK GIVEN AWAY**—To introduce our high-grade, true-to-name, sure-to-bear, easy-to-sell fruit trees, we are offering for sale 1000 shares of stock of \$10 each, and with each share of stock we give a bonus good for \$10 in nursery stock. Applicants must be white, reliable, and owners of real estate. Write today. Willis Valley Nursery Company, 923-3-4 Jefferson Co. Bank Bldg., Birmingham, Ala.

## TRUCK SEEDS

**BEST TRUCK SEED**: Grown especially for seed. Any variety the following: Cucumbers 55c. lb.; cantaloupe, Rocky Ford grown, 55c.; melon: Watson 40, any other melon 35; tomato 41.35; okra 25c. Corn, weevil proof, big yielding, dollar peck, bushel three. Cotton, upland long, selling 14c., heaviest yielding, dollar fifty bushel. Profit fifty to five hundred dollars acre trucking. Send 4 cents stamps for instructions. L. A. Stoney, Alledale, S. C.

## FRUIT, FARM AND TRUCK LANDS

### ALABAMA

**GOOD INVESTMENT**—We offer for sale 13,000 acres of best farm, fruit and stock-raising land in solid body, situated only a short distance from Bay Minette in Baldwin county, Alabama.

This land lies well, being level to slightly rolling, with several streams of running water through the tract, making it very desirable for colonization purposes.

This tract can be purchased for the low price of \$7 per acre. Will arrange terms. T. L. Moore & Co., Room 109 Masonic Temple, Mobile, Alabama.

### ARKANSAS

**NEW townsite and truck gardeners' settlement** just opened on N. O. M. & C. R. R., in Chickasaw County, Miss., in the "Hardwood Belt." Best and richest land, adapted especially for raising all garden products. On direct line to all city markets. Lots and tracts sold on easy payments. L. A. Fitzpatrick, Jr., Helena, Ark.

### FLORIDA

**FREE**—William L. Larkin's booklet, "The Truth About Florida," with a six-months' subscription (at one-half regular rates) to The Indian River Farmer. Fruit growers, truckers, general farmers, folks interested in Florida, send 25c. to The Indian River Farmer, V-1, Vero, Fla.

**INVALID** will sell best truck land in Fla., muck, half price; lake-front houses, splendid water, growth enormous. Particulars by John Heaton, 415 Harrison St., Tampa, Fla.

**THE PALATKA FARMS COMPANY** of Palatka, Florida, offers to homeseekers the very superior advantages of splendid soil, adapted to potatoes, corn and trucking, or that for oranges and grapefruit, or for combination of both, with location unsurpassed, lying along the beautiful St. Johns River, 2 miles of Palatka, an up-to-date city of 8000 population. It boasts of electric-light and gas plants, four railroads and cheap river transportation. Write for literature. P. J. Becks, Palatka, Fla.

**I OFFER FOR SALE** for sixty days some of the finest fruit and farm lands in Polk county, situated near the city of Lakeland, the best town in the best county in the State of Florida, in tracts of 5000 to 18,000 acres. For quick sale will sell at much less than actual value. It is on railroad. Geo. C. Barton, Lakeland, Fla.

**HAVE ANY KIND OF LAND** to be found in South Florida and am too old to improve. Write me. W. H. Cox, M.D., Brooksville, Fla.

**HAVE 23,500 acres** of high (no swamps) land in Orange county, Florida, a few miles west of Orlando in the Lake region. This land can be bought right at this time. Write Chandler Campbell, Hamburg, Iowa.

**FOR SALE**—Timber, turpentine, grazing lands, colonization tracts, and farms in all parts of South; dividend-paying orange, grapefruit and pineapple groves; truck and farm lands, rural water-front and town residential properties, improved and unimproved properties of all kinds, boats and yachts in Florida. Write for our lists. Waters Realty Co., Walton, St. Lucie Co., Fla.

**FOR SALE**—Water-front in small tracts on Manatee River, Florida; soil survey shows ideal citrus soil; fine home sites; boating, fishing; close to cities, Tampa Bay and Gulf resorts; flowing wells. Address Manatee River Land Co., Inc., 101 1/2 Franklin St., Tampa, Fla.

**FLORIDA REAL ESTATE OF MERIT**—Let me tell you about our bungalow sites, 10 to 40-acre tracts for citrus fruit, and the finest country clubhouse in Florida. Literature free. Address J. F. Darnelle, Box 65, Fort Monroe, Va.

**FOR SALE**—82 acres of pine land and hammock land; 500 orange trees, 300 grapefruit trees; both are seedling and budded; 2000 boxes; 6-room house; 1 good stable; in 3 years 5000 boxes; close to the Caloosahatchee River; 2 miles west of La Belle. Cash, \$14,000, or \$7000 cash down and balance 2 or 3 years with 8 per cent. J. N. Blount, owner, La Belle, Fla.

### LOUISIANA

**FOR SALE**—A sugar plantation containing 1250 acres, 800 of which are in cultivation of cane and corn. Have 40 head of mules, implements, etc. Land contains large homes for owners, cabins, stables, barns, and everything complete for operation of one of the finest pieces of land in Louisiana. Railroad through property. For particulars relative to price and terms address No. 1673, care Manufacturers Record, Balto., Md.

### MARYLAND

**FOR SALE**—Country estates and farms, adjacent to Baltimore city, in Baltimore, Howard, Harford and Anne Arundel Co. W. E. Ferguson, 217 St. Paul St., Baltimore, Md.

### MISSISSIPPI

**DELTA FARM**—331 acres Sunflower county, Mississippi. I have been all over this. It is cleared and in cultivation; plenty of 2 and 3-room houses; fine black loam; rented this year for \$1500 cash; location 3 1/2 miles of Indianola, a splendid town, on public road; might exchange. Price \$20,000; easy terms. J. C. H. Jones, with J. T. Sledge & Co., 69 Madison Ave., Memphis, Tenn.

### NORTH CAROLINA

**700 ACRES**, \$3 an acre, 1 1/4 miles from Columbia, county seat of Tyrrell Co., N. C.; level black cut-over pine timber land; no fences or improvements; cattle pasture all winter on this land without extra feed or shelter; a fortune in horses, cattle or mules. Terms cash. J. B. Finch, Cortland, O.

### TEXAS

**OWN A SMALL-FARM HOME** in the Gulf country, suburban to Houston, Texas, the coming great city of the South. Small cash payment gives possession; small monthly payments pay it out. No interest. No taxes. Big return for those who buy now. Write for free illustrated folder. C. W. Hahl Co., Inc., 504 Com'l Bank Bldg., Houston, Tex.

### VIRGINIA

**1415 ACRES** fenced with woven wire. 400 acres rich land. New 5-room dwelling. New barn 60x150 ft. Three miles to growing town. Well watered. A snap at \$11 per acre. Send for bargain list of farm and timber lands. Emmet D. Gregory, Dillwyn, Va.

**THE best agricultural and stock farm** of 2700 acres in Eastern Virginia, on navigable tidewater, including 1700 acres of fine timber; brick barns, etc. Green & Redd, Richmond, Va.

**VIRGINIA ESTATES**—Colonial homes, plantations, farms, suburban homes, Albarippen orchards, timber lands. Write us for what you want. We have it. R. N. Flanagan & Co., Charlottesville, Va.

**VIRGINIA FARMS**—Fine blue grass, grain and dairy farms in the heart of the Piedmont section of Virginia, Culpeper, Fauquier and adjoining counties. Ask for catalogue. The L. M. Allison Co. Real Estate Brokers, Remington, Va. Established 1885.

## FINANCIAL

**AN UNUSUAL OPPORTUNITY** to secure an interest in a splendidly equipped operation in the Pocahontas field, working the original No. 3 seam, 5 feet thick. The management is in the hands of the wealthiest and most successful operators in the field. Over \$400,000 has been spent on the improvements, and the works have never lost a day for want of orders. The large stockholders and directors represent a tonnage of several millions annually and a wealth of many millions of dollars.

Particulars as to the directors and stockholders will be furnished to bona-fide interested parties.

The unusual conditions prevailing for the past year compels the owner (a non-resident) to sacrifice the stock, which will be sold for \$50 per share, par value \$100, and it cost that. Terms easy; \$10 per share down and \$10 per share per month. Certificates in one-share lots or any number. Brokers protected. Address No. 1684, care Manufacturers Record, Balto., Md.

## EQUIPMENT WANTED

**WANTED**—Immediately, a 3/4-yd. drag-line bucket; Page preferred. Box 25, Dancy, Wis.

## DAIRY EQUIPMENT

**DAIRY EQUIPMENT**—For Sale at Bargain Prices—1 Davis 12-bottle filler, medium-sized Tubular Cooler; 1 Reid Pasteurizer, 1 large milk-receiving vat, 1 large starter can, 1 small swing churn, 1 large Simplex No. 3 combined Churn and Worker, a quantity of block tin pipe with fittings, 1 milk pump and 12-ft. section of milk conveyor, 1 20th Century Babcock tester, 12 bottles, motor driven. All of the above in good condition. C. H. Yates, Mgr., Oak Ridge, Virginia.

## PATENT ATTORNEYS

**VALUABLE INVENTIONS** justify only best legal service. Consult Vernon E. Hodges, Attorney-at-Law, Barrister Bldg., Washington, D. C. Practice before the U. S. Supreme Court; all Circuit Courts; Courts of the District of Columbia, and the U. S. and Foreign Patent Offices exclusively. Continuous practice since 1886. Extensive experience with all classes of invention, representing lawyers, manufacturers and inventors in every State.

**PATENTS**—Herbert Jenner, patent atty. and mechanical expert, 606 F St., Washington, D. C. I report free of charge if a patent can be had and its exact cost. Send for circular.

**EUGENE C. BROWN, ENGINEER AND PATENT LAWYER**, Suite 40 Victor Building, Washington, D. C. Member Bar U. S. Supreme Court. Patents and Trademarks. Inventions are considered both from Engineering and Legal standpoints in his prosecution of patents. An experience of over 20 years as Examiner in U. S. Patent Office and over 6 years as Patent Expert in important patent suits are my special qualifications. Reports upon validity and infringement. Send sketch of invention for advice.

**C. L. PARKER, Patent Lawyer**, formerly member Examining Corps U. S. Patent Office, 924 G St., Washington, D. C. Patents secured. Patent suits conducted. Reports on the patentability of inventions, the scope and validity of patents, and whether any process or machine infringes existing patents. Reference to prominent manufacturers and pamphlet of instructions furnished upon request.

**PATENT YOUR IDEAS**—\$9000 offered for certain inventions; book, "How to Obtain a Patent" and "What to Invent," sent free upon request; send rough sketch for free report as to patentability. We advertise your patent for sale at our expense. Chandler & Chandler, patent attorneys, 978 F St., Washington, D. C.

**PATENTS** secured or Fee returned. Send sketch for free report as to patentability. Guide book and what to invent, with valuable list of inventions wanted, sent free; \$1,000,000 offered for inventions. Patents secured by us advertised free in World's Progress; sample free. Victor J. Evans & Co., 12 Ninth St., Washington, D. C.

**PATENTS THAT PROTECT AND PAY**. Advice and books free. Highest references. Best results. Promptness assured. Send sketch or model for free search of Patent Office records. Trade-marks registered. Watson E. Coleman, Patent Lawyer, 624 F St., Washington, D. C.

# PROPOSALS

## GOVERNMENT PROPOSALS

**PROPOSALS FOR DESKS, CHAIRS, FILING UNITS, Card Index Cabinets, Bookcases, Electric Cable, Terminal Bells, Wire Cable, Babbit Metal, White Brass, Nails, Plate Washers, Reamers, Flax Packing, Manila Rope and Life Preservers.** Sealed proposals will be received at the office of the General Purchasing Officer, The Panama Canal, Washington, D. C., until 10.30 A. M. March 3, 1915, at which time they will be opened in public, for furnishing the above-mentioned articles. Blanks and general information relating to this Circular (No. 901) may be obtained from this office or the offices of the Assistant Purchasing Agents, 24 State Street, New York City; 614 Whitney-Central Building, New Orleans, La., and 1066 North Point Street, San Francisco, Cal.; also from the U. S. Engineer Offices in the following cities: Seattle, Wash.; Los Angeles, Cal.; Baltimore, Md.; Philadelphia, Pa.; Pittsburgh, Pa.; Boston, Mass.; Buffalo, N. Y.; Cleveland, Ohio; Cincinnati, Ohio; Chicago, Ill.; St. Louis, Mo.; Detroit, Mich.; Milwaukee, Wis.; St. Paul, Minn.; Chattanooga, Tenn.; Louisville, Ky.; Mobile, Ala., and Galveston, Tex.; Commercial Club, Kansas City, Mo.; Chamber of Commerce, Quincy, Ill., and Commercial Club, Tacoma, Wash. F. C. BOGGS, Major, Corps of Engineers, U. S. A., General Purchasing Officer.

**TREASURY DEPARTMENT**, Supervising Architect's Office, Washington, D. C., February 15, 1915. Sealed proposals will be opened in this office at 3 P. M. March 29, 1915, for the construction, complete (including mechanical equipment, interior lighting fixtures, and approaches), of the United States postoffice at Smyrna, Del. One-story-and-basement building; ground area, 2300 square feet; first floor and ceiling fireproof; stone and brick facing with wood cornice, etc.; tin roof. Drawings and specifications may be obtained from the custodian of site at Smyrna, Del., or at this office in the discretion of the Supervising Architect. O. WENDBEROTH, Supervising Architect.

**PROPOSALS FOR WOOL WASTE, OAK-um, Rock Salt, Coal Tar, Carbon Bisulphide, Sal Soda, Red Lead, Paints, Turpentine, Varnish, and Shellac.** Sealed proposals will be received at the office of the General Purchasing Officer, The Panama Canal, Washington, D. C., until 10.30 A. M. March 3, 1915, at which time they will be opened in public, for furnishing the above-mentioned articles. Blanks and general information relating to this Circular (No. 902) may be obtained from this office or the offices of the Assistant Purchasing Agents, 24 State Street, New York City; 614 Whitney-Central Building, New Orleans, La., and 1066 North Point Street, San Francisco, Cal.; also from the U. S. Engineer Offices in the following cities: Seattle, Wash.; Los Angeles, Cal.; Baltimore, Md.; Philadelphia, Pa.; Pittsburgh, Pa.; Boston, Mass.; Buffalo, N. Y.; Cleveland, Ohio; Cincinnati, Ohio; Chicago, Ill.; St. Louis, Mo.; Detroit, Mich.; Milwaukee, Wis.; St. Paul, Minn.; Chattanooga, Tenn.; Louisville, Ky.; Mobile, Ala., and Galveston, Tex.; Commercial Club, Kansas City, Mo.; Chamber of Commerce, Quincy, Ill., and Commercial Club, Tacoma, Wash. F. C. BOGGS, Major, Corps of Engineers, U. S. A., General Purchasing Officer.

**TREASURY DEPARTMENT**, Bureau of Engraving and Printing, Washington, D. C., February 15, 1915. Sealed proposals will be received at this office for furnishing supplies during the fiscal year beginning July 1, 1915, as follows: On Monday, April 5, 1915, at 2 P. M., Paper, and Paper Box Blanks; on Monday, April 12, 1915, at 2 P. M., Dextrine, Textiles, Engravers' Supplies, and Dry Colors. The right is reserved to reject any or all bids or parts of bids. Blank forms with specifications for proposals and further information will be furnished on application to JOSEPH E. RALPH, Director of Bureau.

**U. S. ENGINEER OFFICE**, Galveston, Texas, February 15, 1915. Sealed proposals for jetty and dike work at Aransas Pass, Texas, will be received at this office until 12 M. March 16, 1915, and then publicly opened. Information on application. C. S. RICHE, Lieut.-Colonel, Engineers.

[CONTINUED ON NEXT PAGE.]



# PROPOSALS

SEWERS

WATER-WORKS

ELECTRIC LIGHT PLANTS

BRIDGES

## GOVERNMENT PROPOSALS

**U. S. ENGINEER OFFICE,** Trust Company Building, Postoffice and Tremont Sts., Galveston, Texas, January 23, 1915. Sealed proposals for construction of motor dredge tender La Porte will be received at this office until 12 o'clock noon February 23, 1915, and then publicly opened. Information on application. C. S. RICHE, Lt. Col., Engineers.

**U. S. ENGINEER OFFICE,** Galveston, Texas, February 2, 1915. Sealed proposals for dredging at Port Aransas, Texas, and in the Channel from Aransas Pass to Corpus Christi, Texas, will be received at this office until 12 o'clock noon March 3, 1915, and then publicly opened. Information on application. C. S. RICHE, Lieut.-Col., Engineers.

**U. S. ENGINEER OFFICE,** Wilmington, N. C., February 10, 1915. Sealed proposals for dredging in Neuse River, waterway from Pamlico Sound to Beaufort Inlet, and Beaufort Harbor, N. C., will be received at this office until 12 M. March 9, 1915, and then publicly opened. Information on application. H. W. STICKLE, Maj., Engineers.

## BOND OFFERINGS

### Road Bonds For Sale

Road District Bonds, 25 \$1000, 10-40, 5 per cent. annually. Address C. J. RHEMANN, Commissioner, Brookshire, Texas.

### \$150,000 5% Road Bonds

Sealed bids will be received at Jellico, Tenn., until noon March 2, 1915, for \$150,000 worth of Campbell county road bonds. Bonds will be in denominations of \$100 to \$1000, at option of purchaser, interest not exceeding 5 per cent., payable semi-annually, and to mature 30 years after date. Semi-annual interest and principal payable at New York or at option of purchaser. Bids must be accompanied by a certified check for \$3000, payable to A. B. Mahan, Secretary, Jellico, Tenn. Said bonds to sell not less than par and accrued interest. The Commission reserves the right to reject any and all bids. A. B. Mahan, Secretary.

### Bonds For Sale

On Thursday, March 18, A. D. 1915, at 10 o'clock A. M., the Board of Bond Trustees of the City of Lakeland, Florida, will receive sealed bids at the Commissioners' Room in the City Hall, for the following municipal bonds:

\$130,000 of 5 per cent. Light and Water Bonds, due and payable \$3000 in 1925 and same amount each year thereafter until 1934. \$5000 annually beginning 1941 and continuing until 1961. \$1000 denominations.

\$30,000 of 5 per cent. Fire Department Bonds, due and payable \$2000 in 1932 and same amount annually thereafter until 1941. \$1000 denominations.

\$15,000 of 5 per cent. Hospital Bonds, due and payable \$1500 due 1932 and same amount annually until 1941. \$500 denominations.

All bids must be accompanied by a certified check for 1 per cent. of the amount of bonds bid upon. The Board reserves the right to reject any and all bids. All communications should be addressed to C. D. Clough, Secretary of the Board.

BOARD BOND TRUSTEES,  
Lakeland, Fla.

### Notice of Bond Sale

Brooksville, Fla.

The Board of County Commissioners of Hernando County, Florida, will receive bids for the purchase of the following described bonds, or any part thereof, at the Clerk's office of Hernando County, on or before the expiration of thirty days from the first publication of this notice, the said bids to be opened and the bonds awarded on the sixth day of March, 1915.

The bonds hereby offered for sale are as follows: Two hundred and fifty thousand dollars (\$250,000) Funding and Highway Bonds of Hernando County, Florida, to be dated the sixth day of March, 1915; to mature March, 1945; to bear interest at the rate of five (5) per cent. per annum, which interest shall be due and payable on January first and July first in each year.

All bids shall be enclosed in sealed envelopes addressed to the Board of County Commissioners of Hernando County, Florida, and marked "Bid for Bonds," and shall be accompanied by a certified check on a responsible bank or trust company for a sum equal to one (1) per cent. of the amount of bonds bid for.

The legality of said bonds will be approved by Messrs. Dillon, Thompson & Clay of New York, and their opinion as to the validity of the bonds will be furnished to the purchasers.

The Board of County Commissioners hereby reserves the right to reject any or all bids.

Dated February 1, 1915.  
H. D. EVANS,  
Chairman of the Board of County Commissioners of Hernando County, Florida.  
M. H. SNOW,  
Clerk of the Board of County Commissioners of Hernando County, Florida.

## PROPOSAL ADVERTISING INFORMATION

RATE: 20 cents per line per insertion.

PUBLICATION DAY: Thursday.

FORMS CLOSE 9 A. M. Wednesday. Copy received later cannot be published until issue of following week.

NIGHT LETTER: When too late to send copy by mail to reach us by 9 A. M. Wednesday, forward by night letter.

## THE DAILY BULLETIN OF THE MANUFACTURERS RECORD:

Published every business day; gives information about the industrial, commercial and financial activities of the South and Southwest.

The Daily Bulletin can be used to advantage when copy cannot reach us in time for publication in the Manufacturers Record before bids are to be opened, or when daily publications are necessary to meet legal requirements.

The same rate applies—20 cents per line per insertion.

## Notice of Sale of Fairfax County (Virginia) Bonds

Fairfax, Va.

Sealed bids for the purchase of all or any portion of the bonds to the amount of \$50,000 to be issued by the county of Fairfax, Virginia, for Providence Magisterial District of said county. Said bonds shall be in denominations of \$100 or such multiple thereof as shall be desired by the successful bidders or purchasers thereof; shall bear interest at the rate of 5 per cent. per annum, payable semi-annually at the office of the Treasurer of the said county, and shall mature and be payable as follows:

\$10,000 thereof ten years from the date thereof.  
\$12,000 thereof twelve years from the date thereof.  
\$14,000 thereof fifteen years from the date thereof.  
\$14,000 thereof twenty years from the date thereof.

Will be received by the undersigned Board of Supervisors of Fairfax County, Va., at Fairfax, Va.

All bids to be subject to acceptance or rejection by said Board and to be opened on the 3d day of March, 1915, at 12 o'clock noon. No bond shall be sold for less than par.

The full faith and credit of the entire County of Fairfax is pledged for the payment of said bonds.

Said bonds are exempted from taxation as provided by Chapter 229 of the Acts of Assembly, 1912.

The Board of Supervisors of Fairfax County, Va.

By F. W. RICHARDSON,  
Clerk of said Board.

## Notice of Bond Sale

Petersburg, Va.

Sealed proposals will be received by the Finance Committee of the Council of the City of Petersburg, Va., February 23, 1915, at 4:30 o'clock P. M. for the purchase of the whole or any part of the following described bonds of the City of Petersburg: \$100,000 "Colored Public School 4 1/2 per cent. Gold Bonds," also \$50,000 "Street Roadway 4 1/2 per cent. Gold Bonds," dated September 1, 1914, and running 40 years straight, bearing interest at the rate of 4 1/2 per cent. per annum, payable semi-annually on the first day of March and the first day of September, at the office of the City Treasurer.

Each proposal must be for the bonds and accrued interest from September 1, 1914, to the date of delivery, and accompanied by a certified check on some responsible banking institution, payable to the Treasurer of the City of Petersburg, for 2 per cent. of the par value of the bonds bid for, and should be addressed to G. B. Gill, Auditor City of Petersburg, and marked "Proposals for 4 1/2 per cent. Bonds."

## \$130,000 Road Bonds

Starkville, Miss.

Sealed bids will be received until two o'clock Monday, March 1, 1915, by the Board of Supervisors of Oktibbeha county, at Starkville, Miss., for \$130,000 First Supervisors' District Road Bonds. Denomination \$500, dated February 1, 1915, maturing \$13,000 for each year from the year 1926 to 1936, inclusive, and bearing interest at the rate of 5 or 5 1/2 per cent. per annum, payable semi-annually. Bids to be accompanied by a certified check for \$1000, payable to J. C. McCreight, president of the Board of Supervisors. The board reserves the right to reject any or all bids.

For further information, apply to M. A. Saunders, attorney for the board.

E. O. McILWAIN,  
Chancery Clerk.

## \$18,000 Loan Wanted

Pittsboro, Miss.

Calhoun County, Miss., wants to borrow eighteen thousand dollars, payable January 1, 1916. Will pay 6 per cent. interest. Write Dennis Murphree, Pittsboro, Miss., for particulars.

## Municipal Bonds

White Sulphur Springs, W. Va.

Sealed bids will be received by the town of White Sulphur Springs, W. Va., until one o'clock Saturday, March 13, 1915, for \$9500 6 per cent. ten and twenty-year water and sewer bonds.

Certified check for 10 per cent. of bid to be enclosed. The right is reserved to reject any or all bids. Assessed valuation of property is \$475,448. For further information address W. A. Mastin, Mayor, or B. F. Dixon, Recorder.

## Bonds For Sale

The Contractors on the Ward County Irrigation District No. 1 have for sale \$340,000 of 6 per cent. semi-annual bonds. The above bonds are gilt-edged and are of the same class as county road bonds, and must not be confused with the average irrigation bond. For further information write or wire BAKER MANUFACTURING CO., OF TEXAS, Sweetwater, Texas.

## School Bond Sale

Waynesboro, Miss.

Wayne county will offer \$1200 Consolidated School Bonds on first Monday of March, A. D. 1915; 6 per cent. interest, payable annually. Bonds to run 20 years, with the privilege of redeeming them in 10 years.

W. A. BODI,  
Chancery Clerk of Wayne Co., Miss.

## PAVING, WATERWORKS AND SEWERS

## Water, Sewer and Street Improvement Plans and Specifications Wanted

Plans and specifications wanted for clear water, sewer improvements and street paving, for the purpose of calling an election for bond issue.

W. L. PENICK, Mayor,  
South Boston, Va.

## Hard-Surfaced Highways

LEGAL NOTICE.

Brooksville, Fla.

The Board of County Commissioners of Hernando County, Florida, will on the 6th of March, 1915, at twelve o'clock noon, at Brooksville, Florida, at the Clerk's office in the Courthouse, receive sealed bids for the construction of hard-surfaced highways in Hernando County, Florida, according to plans and specifications of said highways now on file in the Clerk's office at Brooksville, Florida, and in the office of Jaudon Engineering Co. of Savannah, Ga. Contractors to furnish all materials and labor. The Board reserves the right to reject any or all bids.

H. D. EVANS,  
Chairman.

Attest:  
M. H. SNOW, Clerk.

## MISCELLANEOUS

## Notice to Builders, Steam Fitters, Plumbers and Electricians

Greenville, Miss.

Sealed proposals will be received by the undersigned at the office of the Mayor until March 15, 1915, for furnishing materials and erecting high-school building for the City of Greenville, Miss., including the building proper, heating, plumbing and wiring. For plans and specifications apply to R. H. Hunt, Architect, Chattanooga, Tenn. A deposit of \$25 will be required, which will be refunded upon the return of the plans. The Committee reserves the right to reject any and all bids.

J. E. LEPPERT,  
Chairman Building Committee.

## For the Construction of Seven Bridges

NOTICE TO CONTRACTORS.

Elkins, W. Va.

The County Court of Randolph County, West Virginia, will receive sealed bids on March 1, 1915, until 2 o'clock P. M., for the construction of the following bridges, to wit: *Stone Outter Bridge*—On the S. & P. Turnpike. Dimensions—Length clear span 25 feet, clearance under bridge 8 feet, clear roadway of 18 feet, skew 50 degrees, wing walls 8 feet long.

*Kings Run Bridge*—On Beverly and Fairmont Turnpike. Dimensions—Length clear span 45 feet, clearance under bridge 5.5 feet, clear roadway of 18 feet, skew 60 degrees, wing walls 10 feet long.

*Inner's Run Bridge*—Beverly and Fairmont Turnpike. Dimensions—Length clear span 40 feet, clearance under bridge 7 feet, clear roadway 18 feet, wing walls 12 feet long.

*Mill Creek Bridge*—Huttonsville, Helvetia and Pickens Pike, at Rosencrance's Mill, near the town of Mill Creek. Dimensions—Length clear span 70 feet, clearance under bridge 8.5 feet, clear roadway of 14 feet, wing walls on the upper side 15 feet long, wing walls on the lower side 8 feet long.

*Stone House Bridge*—Across Cheat River. Dimensions—Length clear span 170 feet, clearance under bridge 17 feet, clear roadway 14 feet, wing walls on east side 15 feet long, wing walls on west side 12 feet long.

*Bridge Over Run Near Arthur Crouch's*—On the Staunton and Parkersburg Pike. Dimensions—Length clear span 20 feet, clearance under bridge 5 feet, clear roadway of 18 feet, wing walls 8 feet long.

*Stalnaker Run Bridge on Leading Creek Pike*—Dimensions—Length clear span 20 feet, clearance under bridge 7 feet, clear roadway of 18 feet, wing walls 7 feet long.

All these bridges are to be constructed of concrete except the Stone House Bridge, on Cheat River, which will be constructed of concrete or steel.

By order of the Court.  
THADDEUS PRITT, Clerk.

## Proposal for Courthouse

Lincolnton, Ga.

Sealed proposals, addressed to Samuel L. Wilkes, Ordinary, Lincolnton county, Lincolnton, Ga., will be received until twelve o'clock noon March 15, 1915, for furnishing all material and labor required for constructing a two-story brick and frame courthouse building at Lincolnton, Ga.

Plans and specifications can be seen at office of Samuel L. Wilkes, Ordinary, Lincolnton, Ga., also at office of Architect G. Lloyd Preacher, Augusta, Ga., and office of Willis Irvin, Washington, Ga.

Plans and specifications may be secured at discretion of architect by general contractors desiring to submit proposal on entire work contemplated by depositing twenty-five (\$25) dollars with architect, which deposit will be returned when proposal, accompanied by certified check or bidder's bond for 2 per cent. of amount of bid, has been submitted and when plans and specifications have been returned in good condition.

Plans and specifications may be secured by subcontractors and additional sets by general contractors by depositing ten (\$10) dollars with architect, five (\$5) dollars of which will be returned when plans and specifications have been returned to architect, and the remaining five (\$5) dollars will be retained to cover cost of duplication of plans and specifications.

All bids must be accompanied by certified check for 2 per cent. of amount of bid, and the successful bidder will be required to furnish surety bond for half of contract price.

The right is reserved to reject any or all bids submitted, delay award of contract until competency of bidders can be determined, or to accept any bid, irrespective of price, which seems to the Ordinary to be the most advantageous.

(Signed) SAMUEL L. WILKES,  
Ordinary.

## Notice of Postponement of Letting

Clearwater, Fla.

The Town of Clearwater, Florida, will not receive bids on paving as advertised February 17, 1915, postponing until later date. Bids received on sewers and appurtenances as advertised.

R. T. DANIEL,  
Town Clerk.

## Attention of Large Contractors

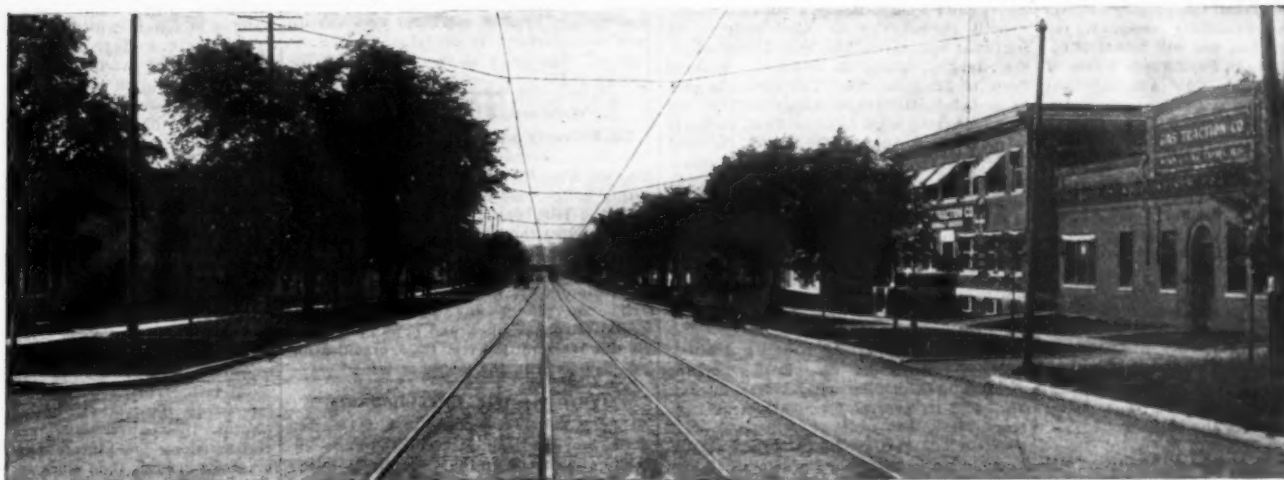
is called to an opportunity, of which full information can be obtained by writing

John L. Roper Lumber Co.  
NORFOLK, VA.





# Barrett's PAVING PITCH



University Avenue, S. E., Minneapolis, Minn. Creosote Blocks filled with Barrett's Paving Pitch

## Adds to the Life of Wood Block Pavements

**C**REOSOTED wood block pavement on a concrete foundation forms a very durable and satisfactory pavement. The creosote saturation prevents decay in the wood, but it does not prevent the expansion of the wood when wet. Laboratory experiments and service tests have indicated that, no matter how thoroughly creosoted, the wood fibre still retains some capacity for absorbing moisture.

To be sure, most of the rain will quickly run off a wood block pavement and the surface will be dry in a very short time. This, however, is because the surface of the wood block pavement gets pounded down and becomes very hard and compact, and thus is armored against the intrusion of water at that point.

There is, however, no such compacting process going on at the base of the block, and the water which finds its way down there is absorbed by the wood and a certain amount of expansion is set up. This necessitates expansion joints, which are always troublesome affairs, and which are by no means always successful.

The ideal remedy is to prevent the expansion altogether by protecting the block absolutely from water at the sides and bottom of the block. This can be done with Pitch Filler. Pitch will adhere tightly to the wood at all times of the year and at all temperatures. Sand filler, of course, has no water-resisting capacity, while asphalt filler does not cling to creosoted wood as well as pitch, which, being of kindred nature, will unite and form a homogeneous compound with such creosote oil as may exude on the surface of the block.

The favorite method of using Pitch Filler with wood block is to pour it on the surface and work it into the joints by the use of squeegees. This, for example, is the practice in Minneapolis, which has the largest area of wood block pavement of any city of the United States. It is also the common practice in London, which has 300 miles of wood block pavement.

Booklet telling all about Paving Pitch free on request. Address our nearest office.

### BARRETT MANUFACTURING COMPANY

New York  
Pittsburgh

Chicago  
Detroit

Philadelphia  
Birmingham

Boston  
Kansas City

St. Louis  
Minneapolis

Cleveland  
Salt Lake City

Cincinnati  
Seattle

## INDUSTRIAL NEWS OF INTEREST

Items of news about industrial, railroad or financial interests, building operations, construction work, municipal improvements, or the sale of machinery or the letting of contracts in the South or Southwest, are invited from our readers whether they are advertisers or subscribers or not. We invite information of this character from readers in the North and West about their Southern business operations, as well as from Southern readers. News of value will be published just as readily when from non-advertisers as from advertisers.

### A Correction.

In the Manufacturers Record recently Mathews combination roller and friction skid, manufactured by the Mathews Gravity Carrier Co. of Ellwood City, Pa., was incorrectly described as a gravity carrier or conveyor. In addition to its use as a roller or friction skid, the device can be utilized as a pull or push truck, or a short ladder convenient for reaching a height of 10 or 12 feet.

### Purchases Subsidiary Co.'s Property.

The Whitaker-Glessner Co. of Wheeling, W. Va., has purchased the Portsmouth, O., property of its subsidiary company, the Portsmouth Steel Co., and will hereafter operate the plant as the Portsmouth Works of the Whitaker-Glessner Co. Announcement is made that the change has been made solely for economical and operating reasons, and no change in management or policy of the Portsmouth Steel Co. is contemplated.

### Opens Southern Office.

After a careful study of the business situation, Hoggson Bros., contracting designers and Builders of New York, Chicago and Boston, have opened a Southern office in the Third National Bank Bldg., Atlanta, Ga., in charge of H. T. Underwood. This firm, under a unique form of contract known as the Hoggson building method, furnishes the plans, labor, material, decorations and fittings of the building, and is said to guarantee a fixed limit of cost to the owner and a fixed limit of profit to the company.

### Complete Saw and Planing Mill Equipment for Sale.

Sawmill, consisting of double-deck mill, steam nigger, live rolls, cut-off and edging saws, with daily capacity of 25,000 feet, dry-kiln, planing mill, logging outfit, including locomotive and logging trucks, eight miles of rails, skidder and mules, all now in operation, and 10,000,000 feet of pine timber, with 15,000,000 feet additional timber available at reasonable prices, will be offered for sale March 18, 1915, at the Real Estate Exchange in Charleston, S. C. The property is said to be well located at Ehrhardt, S. C., and has good railroad connections. For further particulars address T. T. Hyde & Sons, 42 Broad St., Charleston, S. C.

### Western Electric Developments.

Progress in the commercial applications of electricity has necessitated the development of new apparatus and the redesigning of old apparatus to meet the new requirements. During 1914 the Western Electric Co., 463 West St., New York, made a number of new and important developments in electrical apparatus. Improvements to and the broadening of the field of use of intercommunicating telephone systems, switchboards with a new type of equipment for central battery central office work, automatic ringing and listening features, and standardization of switchboard equipment, and perfection of mine telephone equipment are among some of the new developments by the Western Electric Co.

### C. C. Fouts Co. Seeks Representatives

Representation in many sections of the country is being sought by the C. C. Fouts Co. of Middletown, O., manufacturer of metal silos, grain and storage bins, culvert pipe, tanks, metal garages, metal shelving, etc. Circulars and catalogues have been issued by the company describing and illustrating its "Duro" pure iron silos and corrugated culverts, "Armco" and "Century" combination corn crib and grain bin, knock-down tanks, portable houses and garages, and the Fouts unit system of steel shelving and bins for factories, warehouses, etc. These circulars and catalogues will be sent to interested persons upon request.

### "Sherarduct" Rigid Conduit.

Exclusive of the signal and other secondary electrical systems, it is said that 220 miles—983 tons—of "Sherarduct" rigid conduit, manufactured by the National Metal Molding Co., 1107 Fulton Bldg., Pittsburgh, manufacturer of electrical conduits and fittings, are used in the construction of the new Equitable Bldg. in New York. "Sher-

arduct" Sherardized rigid conduit is composed of a zinc-steel alloyed interior and exterior surfaces, further protected by coatings of a clear, transparent enamel baked on. The National Metal Molding Co. also manufactures "Flexsteel" armored conductor and fittings, non-metallic flexible conduit, metal molding and fittings, sectional switch boxes, etc.

### Portable Cleaning and Polishing Machine.

A portable machine, which is claimed to be original in construction and operation for cleaning and polishing windows or other smooth surfaces by an electrically-driven frictional apparatus, has been developed by the Roby Cleaning & Polishing Machine Corp. of Staunton, Va. The device is said to be substantially and simply built of the best materials, with freedom from intricate mechanism, and is easily cared for and operated. Power is furnished by a standard electric motor. While the machine was originally designed for window cleaning, it is adaptable for cleaning railroad cars, dressing and polishing floors, furniture, brass, etc. When used as a floor polishing machine, instead of the felt polisher or flexible brush, an emery or sand cloth is substituted.

### Removal of Leather Belting Plant.

The Olmsted-Flint Co., leather belting manufacturer, having sales offices in New York and its general headquarters at Lawrence, Mass., has removed its general headquarters and factory to Cambridge, Mass., occupying a two-story brick factory building, which has been completely remodeled for its use. Latest model machinery for belt making has been installed and a large part of the old equipment has been discarded. While not the largest, it is said the new plant will be one of the most up-to-date of its kind in New England. On January 1 of this year Frank M. Schiffmacher, who had previously been in charge of the manufacturing end of the business, purchased complete control, and is now president and treasurer of the company. The other members of the concern, who had previously been in charge of the management, have retired from active interest in the affairs of the company. In connection with the installation of its plant in Cambridge the company will also carry a complete line of pulleys, shafting, hangers and other transmission appliances for the extension of its business along even broader lines than heretofore.

## TRADE LITERATURE

### Railroad and Contractors' Equipment For Sale.

New and second-hand railroad and contractors' equipment is described in a monthly stock list issued by George B. Curd, Merchants' Bldg., Cincinnati, O. This equipment includes hoisting engines, cement mixers, road rollers, steam shovels, steam pumps, locomotives, cars, etc.

### Durham Buggies.

Pocket Catalogue No. 9, issued by the Durham Buggy Co. of Durham, N. C., not only illustrates and describes the products of the company, but also contains many illustrations showing views of Durham and vicinity. Description of standard equipment, specifications and illustrations showing the large variety of styles of buggies manufactured by the Durham Buggy Co. are given in the catalogue.

### Flory Products Used at Kenisco Dam

Construction work at the Kenisco dam of the Catskill Water System for the city of New York is illustrated in a pamphlet issued by the S. Flory Manufacturing Co. of Bangor, Pa., which describes Flory products, cableways, engines, etc., used on this contract. The equipment, all electrically driven, consists of two Flory 12-ton capacity cableways, each operated with a 425-horse-power special cableway hoist; two Flory tower moving hoists for moving the 125-foot towers supporting the cableways; nineteen Flory 75-horse-power two-speed

"patented" hoists operating traveling derricks on the dam and at the quarries, and twenty-two Flory 11-horse-power boom swingers for swinging booms on traveling derricks.

### Distributing Souvenir Advertisements.

At the beginning of the year the Broderick & Bascom Rope Co. of St. Louis, Mo., issued a duplicate of its 1914 souvenir advertisement. This is a celluloid envelope opener having on one side a six-inch rule and on the other side a calendar for the year 1915. A pocket pencil in the form of a cartridge, bearing the company's name and address and a memorandum of "Yellow Strand" powersteel wire rope is also being distributed by the Broderick & Bascom Rope Co.

### Dockham's Glove Directory.

The fourth edition of Dockham's Report and Directory of glove and mitten manufacturers in the United States and Canada has been issued by the Dockham Publishing Co., 6 Beacon St., Boston. The manufacturers are listed alphabetically under cities and towns, which are also given under general State headings. Information regarding address, description of goods manufactured and number and type of machines operated by each manufacturer is contained in the directory. The price of the Report and Directory is \$1.

### Western Electric News.

The February number of the Western Electric News, issued by the Western Electric Co., 463 West St., New York, contains interesting articles on the Maul telephone system, the telephone system of the Panama-Pacific Exposition, platinum in construction of telephone apparatus, and under the heading "Technical Talks on Technical Topics" annunciators are described. An illustrated article on the opening of the transcontinental telephone lines, and news of interest to the Western Electric Co.'s organization are also given in the February issue.

### Hydro-electric Developments.

Dundee Falls development of S. D. Warren & Co. near Portland, Me., and the Falls Village development of the Connecticut Power Co. on the Housatonic River at Great Falls, near Falls Village, Conn., are illustrated and described in a catalogue reprinted from the Stone & Webster Public Service Journal, issued by the Stone & Webster Engineering Corporation of Boston. Detailed description is given in the catalogue of the construction of the plants and machinery installed, and illustrations are also shown of the work under construction and after completion.

### Primm Oil Engines.

Many illustrations and sectional drawings, together with description of Primm oil engines, manufactured in sizes from 20 to 100 horse-power by The Power Manufacturing Co. of Lima, O., are given in Bulletin No. 3, issued by the company. Explanations of its reason for adopting a horizontal, single-cylinder, two-cycle, crosshead type of construction for Primm oil engines are given in the introductory to the bulletin. Cylinder and cylinder head specifications, ignition, air starter, governor, lubrication, water valve, etc., of the Primm engines are also described in detail.

### Case Machine Co.'s Products.

Grain and peanut threshing machines, corn shellers, baling presses, steam, gas and oil tractors, portable steam, gas and oil engines, tractor gang plows, and Case road machinery, consisting of road graders, wagons, scrapers, drags, rock crushers, etc., are illustrated and described in a comprehensive catalogue issued by the J. I. Case Threshing Machine Co. of Racine, Wis. Part of the catalogue is devoted to a description and specifications of the Case automobile. Specifications, illustrations and sectional drawings of the company's products, together with price-lists, are also contained in the catalogue.

### Dahlstrom Metal Products.

In the latest addition to the technical literature of the Dahlstrom Metallic Door Co. of Jamestown, N. Y., a booklet entitled "Safety First for Hospitals," which is issued primarily for direct advertising purposes, treats the subject of fire prevention in an interesting way and points out the advantages of using Dahlstrom metal products in hospital buildings and similar institutions. Description of fire-prevention installations, such as incombustible partitions, metal doors, trim, etc., as manufactured by the Dahlstrom Company, illustrations of this equipment in actual service and a list of over thirty hospitals using Dahlstrom metal products are given in the bulletin.

### Garbage Disposal by Incineration.

In a pamphlet issued by the Sparks Crematory Construction Co., engineers and builders of garbage crematories and furnaces, 269-289 Walnut St., Memphis, Tenn., on "Garbage Disposal by Incineration," much information is given relating to the operation of the Sparks crematory system for the sanitary and economical disposal of garbage and waste by incineration and cremation. In operation, the plant is claimed to be free from offensive odors, and that the residue from the furnaces is ashes and clinkers, free from organic matter and odor. Methods of construction, operation, capacity and proper location of Sparks crematory systems are discussed in the pamphlet.

### Cumberland Mountain Minerals Co.

A survey of the properties and prospects of the Cumberland Mountain Minerals Co. of Cumberland Gap, Tenn., producer of cement, lime, coke and brick, is given in an attractive catalogue issued by the company. Maps showing location of the properties and railroad facilities of Cumberland Gap, geological section through Middlesboro District, showing limestone, shale for cement making and brick making shales and clays; illustrations of heavy beds of limestone at Cumberland Mountain which are said to be 500 feet thick, and diagrams of the plant and illustrations of machinery therein, with a general description of development, operation, management, etc., of the properties, are contained in the catalogue.

### Highway Magazine for February.

Such subjects as tractor plowing in rebuilding highways, how to eliminate sod from the center of the road in grading work, electrolysis in reinforced concrete, when and how to use a road drag, and other interesting facts about road construction work, are discussed in the February number of the "Highway Magazine" issued by the American Rolling Mill Co. of Middletown, O., manufacturer of "Armco" American Ingot iron roofing, pipe, gutter, terne plate and metal lath. This issue also contains many interesting illustrations of road work in Kansas, the Denver Mountain Park road system, along the Lincoln Highway in Nebraska, and brick road work in Montgomery county, Ohio, radiating from Dayton, which is the county-seat.

### Gravity Conveyors.

A system of transporting boxes, barrels and package goods of all kinds from one floor or department to another, as from the shipping-room or mailing department to the storage, or directly into cars or wagons for shipment, by utilizing the natural force of gravity, is described and illustrated in a folder issued by the Twentieth Century Machinery Co. of Milwaukee, Wis. Constructed in lengths of 8 or 10 feet to be joined together after installation, the conveyor is pitched at a slight angle, which allows the packages to travel at the proper speed, the weight of the package itself when placed on the steel ball-bearing rollers furnishing the motive power. The device is made with carrying capacities from one to 200 pounds. Guard rails attached to the sides of the conveyor are used on curves and steep inclines to prevent the packages from leaving the conveyor. The Twentieth Century gravity conveyor is said to be adaptable to package, etc., elevating and conveying work and makes an efficient and economical method of handling merchandise.

### Uniform Penetration of Wood.

A pamphlet has been issued by the Indiana Tie Co. of Evansville, Ind., describing the Cecil-Williams method of timber preservation for cross-ties, piling, etc., using mixtures of zinc chloride and creosote oil or other chemicals having preservative properties and different specific gravities. In announcing the completion of the details of the Cecil-Williams method of preserving timber, the Indiana Tie Co. claims control of the pending of claims for patent and all rights and privileges of the invention. Principal advantages claimed for the Cecil-Williams method are: Mixtures of preservative fluids of perfectly uniform density under all the varying conditions of quantities of constituent oils or oil and solutions, and of temperatures and consequent variations of the mixing tendency and specific gravities of the constituents as found in practice, by the elimination of air from the impregnating cylinder and its connections. Ease of operation, requiring no attention or manipulation, being automatic, adapted for use with either the full or partial cell process or with any method wherein preservative fluids are injected into wood by submerging the wood in preservative fluid in closed vessels and forcing the preservative into the wood by the application of fluid pressure.





THE CHATTANOOGA RY. & LIGHT COMPANY'S TYPE "O" THEW SHOVEL

## The Thew Shovel Is Standard

— FOR —

Brick Yards, Road Building, Street Grading, Cellar and Sewer Digging, Electric Railway Construction and All Excavations involving daily outputs of 1000 cubic yards or under.

1200 Thew Shovels are now in operation. Some of them are near you.

Write for Catalog "M" and List of Thew Owners

**THE THEW AUTOMATIC SHOVEL CO.**  
LORAIN, OHIO



**Why Put a New Fuse Into the Circuit Every Time You Have a Blowout?**

Cut annual fuse maintenance 80% and secure positive electrical protection under all conditions.

## ECONOMY RENEWABLE CARTRIDGE FUSES

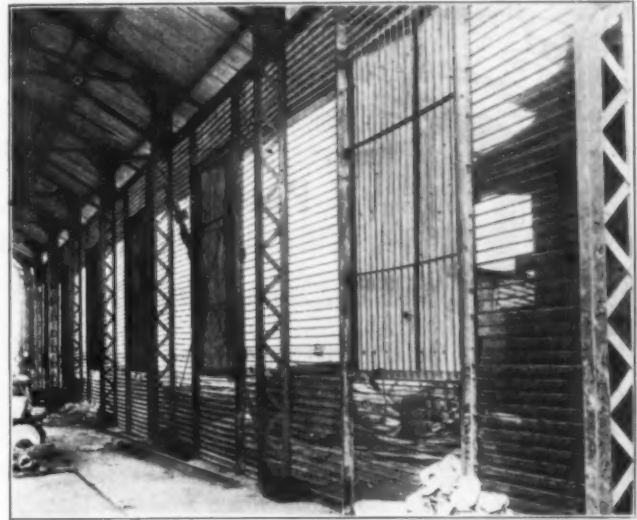
When an Economy fuse blows, you don't throw it away—you simply insert a new renewal element and have virtually a new fuse. 25 blowouts of an ordinary non-refillable fuse (100 Amps., 250 Volts) cost \$10.12½, while 25 blowouts of an ECONOMY renewable cartridge FUSE of the same capacity cost \$2.10—and remember Economy fuses give absolute protection—they do not vent fire nor hold a sustained arc. They are the only renewable fuses uniformly rated. Economy fuses meet the performance specifications governing the use of such devices.



Why spend four times more than necessary in fuse maintenance? Write today for Bulletin M. R.—and list of prominent satisfied users.

Two renewal elements furnished free with each Economy fuse. Figure the saving yourself.

**Economy Fuse & Mfg. Co.** Kinzie and Orleans Sts  
CHICAGO



Corr-Mesh Wall Reinforcement—  
Tramway Building, Panama.

## CORR-MESH

### Scientific Reinforcement

for Concrete Walls, Partitions, Floors  
and Roofs for Factory Buildings.

### Quick, Light, Fireproof Construction at Small Cost

With CORR-MESH you can erect solid concrete walls, roofs, floors and partitions—permanent—fireproof—at low cost.

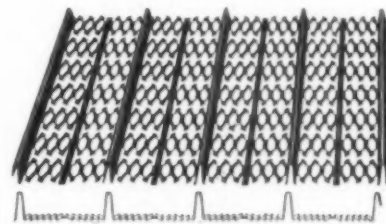
CORR-MESH comes in sheets. You fasten CORR-MESH to frame-work of building and apply concrete inside and out.

You save the cost and labor of studding, or other supporting material.

You get the job done more quickly; it is good and strong. And the cost is about half that of brick.

CORR-MESH is a scientific product designed for strength, permanency and ease of construction. It is the result of vigorous research work by experienced engineers.

More definite details are given below. The whole story is told in our booklet "CORR-MESH," which we will gladly send.



### Corr-Mesh Reinforcement

Stiff-ribbed, one-piece expanded metal. The ribs (¾-inch high) are spaced every 3 ½ inches, giving great strength to the reinforcement and doing away with extra studding. The metal between the ribs is expanded into a diamond mesh.

Easily and quickly put up and plastered. Ideal for industrial buildings, whether with steel, reinforced concrete or wooden frames.

## Corrugated Bar Company

(24 Years Without a Failure)

415 Mutual Life Building, Buffalo, N. Y.

Boston New York Syracuse Philadelphia Chicago St Louis



# PATENT YOUR IDEAS

Book "HOW TO OBTAIN A PATENT" and "WHAT TO INVENT" sent free. Send rough sketch for free report as to patentability. We advertise your patent for sale at our expense.

## Patents for the Following Inventions Are for Sale

AND WE WILL FURNISH FULL DETAILS UPON REQUEST

Thermostat.  
Recording Billiard Cue.  
Automobile Shoe.  
Cigarmaking Machine.  
Spring Wheel.  
Folding Washstand.  
Cutter Attachment.  
Sawset.  
Auto Crank Holder.  
Music Leaf Turner and Portfolio.  
Paper Doll Display Board.  
Cotton Chopper Fruit Gatherer.  
Detachable Can Spout.  
Hay Press Sill.  
Nipple Holder.  
Sickbed Tray.  
Sanitary Coffeepot.  
Electric Switch.  
Seed Sower.  
Safety Brake.  
Electric Time Switch.  
Road Grader.  
Tobacco Box.  
Seed Potato Carrier.  
Knob Spindle Lock.  
Explosive Motor Control.  
Sliding Block Tam Control.  
Placket Fastener.  
Drill Bit.  
Automatic R. R. Gate.  
Sanitary Hose Nozzle.  
Coffee Roaster.  
Shovel Plow.  
Non-refillable Bottle.  
Automatic Grinding Mill.  
Ventilator for Windows.  
Fly Trap.  
Onion Digger.  
Incubator Heater.  
Smoking Pipe Cleaner.  
War Game.  
Fertilizer Distributor.  
Train-Stopping Apparatus.  
Strainer and Pan Lifter.  
Dowel.  
Grease Gun.

Compound for the Treatment of  
Roupe.  
Adjustable Wagon Hound.  
Fire Escape.  
Trolley Guard.  
Gang Plow Hitch.  
Folding Treadle.  
Attachment for Telephone Mouth-  
pieces.  
Wireless Corn Planter.  
Rotary Gas Engine.  
Ladder Shelf.  
Backband.  
Current Timer for Gasoline En-  
gines.  
Clutch Mechanism.  
Self-Basting Pan.  
Door Latch.  
Stump Puller.  
Beet Harvesting Machine.  
Fence Post.  
Tongue Truck.  
Gearing for Windmills.  
Shade Bracket.  
Spring Tire.  
Latch.  
Ice-Cutting Machine.  
Wire Stretcher.  
Towel Holder.  
Washing Machine.  
Anti-Slipping Horseshoe.  
Excavating Machine.  
Pocket Flashlight.  
Quick Action Wrench.  
Brush.  
Rural Mail Carrier.  
Penholder.  
Can Opener.  
Pen-Dipping Gauge.  
Fuel-Feeding Device.  
Diaper.  
Quilting Frame.  
Sled.  
Combination Padlock.  
Combination Tool.  
Toothbrush.

Matchbox.  
Trolley Retriever.  
Meat Clamp.  
Sounding Toy.  
Drinking Attach. for Brooders.  
Wrench.  
Safety Device.  
Electric Lock.  
Automatic Road Guide.  
Self-Locking Rodless End Gate.  
Lamp Chimney Guard.  
Landing Net Frame.  
Pail Holder.  
Railway Frog.  
Egg Box.  
Floor Mop.  
Safety Indicator for Automobiles.  
Potato Sorter.  
Belt.  
Oil Lifting Apparatus.  
Harrow.  
Plant Fender.  
Folding Chair.  
Dustless Ash Sifter.  
Rat Trap.  
Marble Ring.  
Shoe Tongue Retainer.  
Automobile Jack.  
Corn Husking Implement.  
Lady's Garment.  
Pump Operating Mechanism.  
Shaft Coupling.  
Train Check Holder.  
Car Signal.  
Invalid Bed.  
Chicken Brooder.  
Tractor Steering Device.  
Feed-Water Heater.  
Bed Support.  
Gearing for Mowing Machines.  
Eyeglass Attachment.  
Seed Corn Treating Implement.  
Colter Brace.  
Ladder Plow Attachment.  
Armored Automobile.  
Combined Husking Peg and Twine  
Tying Device.

Motor Mowing Machine.  
Mouse and Rat Trap.  
Folding Bench.  
Bag Holder Soldering Iron.  
Pneumatic Cushions for Cycle  
Saddles.  
Automatic Windmill.  
Draft Evener.  
Brake for Car Trucks.  
Oven Grate.  
Plug Faucet.  
Ship Dining Table.  
Shock Absorber.  
Fence Stretcher.  
Fence and Post.  
Gate.  
Oven Door Attachment.  
Grain Bagger.  
Header Harvesting Machine Brake  
Envelope.  
End Gate Fastener.  
Storm Rubbers.  
Cuspidor Carrier.  
Animal Trap.  
Clothespin.  
Auxiliary Car Step.  
Buggy Axle.  
Ventilator Fan.  
Seed Germinator and Plant Forcer.  
Space Block and Crossarms.  
Siphon Hauls for Bottles.  
Rotary Engine.  
Paper File.  
Marine Velocipede.  
Rail Joint.  
Electric Coil.  
Collapsible Crate.  
Saw Handle.  
Fruit Cleaning Device.  
Skirt Supporter and Placket  
Fastener.  
Tire Armor.  
Boring Machine.  
Shoe Buckle.  
Window Lock.

Aerostructure.  
Saw Clamp.  
Hayrake Attachment.  
Butcherer Device.  
Nut Lock.  
Mailbox.  
Gas Lighter.  
Hitching Device.  
Beater for Threshing Machines.  
Window Screen.  
Coin and Stamp Depository.

## CHANDLER & CHANDLER,

ATTORNEYS  
U. S. and Foreign Patents

978 F Street N. W.  
WASHINGTON, D. C.

### ADAM A. WESCHLER AUCTIONEER

### Auction Sale of Plant, Machinery and Other Property of THE EMERSON STEAM PUMP COMPANY

Pursuant to the terms of a decree rendered by the Corporation Court of the City of Alexandria, Virginia, on November 30, 1914, in the consolidated chancery causes of Jacob N. Belt, Adm., etc., vs. The Emerson Steam Pump Company, et als., and Orren G. Staples, who sues, etc., vs. The Emerson Steam Pump Company, et als., the undersigned, appointed by said decree Special Commissioners for the purpose, will offer for sale at public auction, at the plant of The Emerson Steam Pump Company, in the County of Fairfax, Virginia, near the corporate limits of the City of Alexandria, Virginia, at 12 o'clock Noon, on Monday, March 15, 1915, the plant and all the property of The Emerson Steam Pump Company, including patent rights, splendid factory and other buildings of the Company, erected on a tract of land containing 3-88/1000 acres, all the machinery and attachments in said plant, tools, office furniture, completed and uncompleted pumps and parts, etc.

The factory building on this property is 215 feet long and about 63 feet wide, and contains besides the pump factory a fully equipped pattern shop. The building is of steel, brick and cement construction, cement flooring, six inches deep, covered by double oak flooring. Carey roof. It is only about 200 yards by road from the freight station of the Washington-Southern Railway Company.

The plant is now in operation.

The above property will be offered for sale separately and as a whole, and will be knocked down to the highest bidder.

TERMS OF SALE: CASH. Conveyancing at the cost of the purchaser or purchasers. A reasonable deposit will be required on the day of sale on each purchase, and payment in full will be required within thirty days from the date of sale.

EDMUND BURKE,  
GARDNER L. BOOTHE,  
Special Commissioners of Sale.

### FRICK ICE PLANT For Sale

Complete ten-ton Frick Ice Plant. Recently rebuilt and in excellent condition. Cheap fuel, good prices for ice, no competition, plenty of water, and located in a growing town, which is the county site of a recently organized county. This is one of the best locations for an ice plant in the State. Must be sold to settle an estate. An excellent chance for someone.

Address Post Office Box 196 CLAXTON, GA.

### ELECTRIC TRAVELING CRANE For Sale

Ten-ton electric traveling crane in good condition. Suitable for lifting and conveying logs, heavy castings, stone and marble. Just the thing for marble works, foundry or sawmill. For price, description and photograph address

CHARLES E. GRANT Naples, Texas

### Refrigerating or Ice Machine FOR SALE

Cheap for quick removal: 30-ton Refrigerating or 15-ton Ice-Making Corliss Driven Penna. Iron Works Ice Machine, complete.

HERMAN L. WINTERER

908-910 Beach St. Philadelphia, Pa.

### Complete Saw and Planing Mill Plant, Drykiln and Logging Equipment For Sale

Valuable modern, complete Saw and Planing Mill, Drykiln and Logging Equipment. Well located. Good railroad connections. The whole plant and appurtenances in good condition. Situated at Ehrhardt, South Carolina, on A. C. L. R. R.

Will be offered for sale at Real Estate Exchange, Broad St., Charleston, S. C., on Thursday, March 18, 1915, at 11 o'clock A. M.

Sawmill consisting of double-deck mill, Hill Steam Nigger, Live Rolls, Cut-off and Edging Saws, with daily capacity of 25,000 feet; L. Moore Drykiln, Planing Mill, Logging Outfit, including Forney Locomotive, Surrey Parker Skidder, Mules, Logging Trucks and eight miles of 30-lb. rail. In use only three years and now in operation.

Also, about ten million feet of pine timber.

Fifteen million feet additional timber available at reasonable prices.

Terms and full particulars furnished by the undersigned.

T. T. HYDE & SONS,  
No. 42 Broad St., Charleston, S. C.

## MEN WANTED

If you are looking for a position, read this department in our Classified Opportunities every week. Should an opening not be there that is entirely to your liking, advertise for it under "Situation Wanted."

Manufacturers Record



## Special Advertisements of General Interest.

### Rolling Mill and Machine Shop at Birmingham, Alabama FOR SALE

The Property known as the Bul-  
lard Car Door Equipment plant,  
centrally located on Southern  
Railway tracks in Birmingham,  
Ala. Will sell at great bargain.

If interested, write to

THE JEFFERSON COUNTY SAVINGS BANK  
Birmingham, Ala.

### Steam Engineer Electrical Engineer and Pipe Fitter Desires Good Position

Habits unimpeachable. Punctual  
and attentive to Duty. Reputable  
Stencilor. Business and Literary  
Education.

Write to

R. N. SMITH  
Hephzibah, Georgia

### Ready for Large Enterprise Modern Manufacturing Plant in Pittsburgh

#### River Frontage Two Railway Connections

Main building, steel and concrete, over 30,000 sq.  
ft. floor space, wired for electric light and power  
with Standard Sprinkler System throughout. Well  
lighted on all four sides. Smaller modern buildings  
including concrete and brick power house, concrete  
and brick blacksmith shop with 2 forges and hoist-  
ing track, 2 large lofts, as well as large thoroughly  
equipped stable of concrete-brick construction, with  
ample tool storage accommodations. A complete  
plant adapted to almost any branch of manufac-  
turing. Twenty minutes by trolley from city center.

#### OWNERS WILL SELL

OR

WILL COMBINE WITH SUITABLE ENTER-  
PRISE TO BE OPERATED ON THE PREMISES

W. W. NOBLE

Foot of 32nd Street

Pittsburgh, Pa.

### Receivers' Sale of Timber Lands and Sawmills of Kanawha Hardwood Company

By virtue of a judgment of the Superior Court of Cherokee County, made and  
entered at the January Term, 1915, of said Superior Court, in certain consolidated  
actions therein pending, wherein J. L. Smathers, L. E. Bayless and C. M. Hickerson  
are plaintiffs, and J. Q. Barker, W. B. Haarick and J. A. Lewin, partners, trading and  
doing business as Kanawha Hardwood Company, et al., are defendants, the under-  
signed Receivers and Commissioners of the said Court will offer for sale at public  
auction, to the highest bidder, at the Courthouse door in Murphy, North Carolina, on  
Monday, March 1, 1915, certain real and personal property, consisting of about 14,000  
acres of land in Graham and Cherokee counties, North Carolina, most of which is  
covered by hardwood timber; also a large hand-saw mill, three circular-saw mills, a  
log loader, and other machinery, for a full description of which see "Cherokee Scout,"  
a newspaper published in Murphy, North Carolina.

The above described property will be sold upon the following terms: One-third  
to be paid in cash upon the confirmation of sale by the Court, one-half of the remain-  
der of the purchase price to be paid in one year, and the balance to be paid in two  
years from date of confirmation of sale, with six per cent. (6%) interest from date  
of confirmation. Title to be retained until purchase price is paid in full. Ten per  
cent. (10%) of bid to be paid in cash on day of sale as security with compliance with  
bid.

The above sale is to be made for the purpose of satisfying and discharging the  
indebtedness of the Kanawha Hardwood Company according to the priorities fixed by  
the aforesaid judgment in this cause.

D. WITHERSPOON,  
T. J. HILL,  
Receivers and Commissioners.

This the 28th day of January, 1915.

### NOTICE OF FORECLOSURE SALE

OF THE

### John M. Stone Cotton Mills STARKVILLE, MISS.

Twenty acres of land, partly in the corporate limits and half a mile  
from the State Agricultural College.

Modern brick building, two warehouses with railroad switch to doors,  
eighteen cottages and ample water supply. Equipped with 5360 spindles  
and 150 looms to make 64x64, 38½, 5.15 sheeting. In good running order.

Sale on WEDNESDAY, March 10th, 1915, at Courthouse door, Starkville,  
Miss.

FOR FURTHER INFORMATION, ADDRESS

A. C. ERVIN, Trustee

STARKVILLE, MISS.

### Receiver's Sale of the Snowbird Valley Railway Company's Railroad and Other Property

By virtue of a judgment of the Superior Court of Cherokee County, made and  
entered at the January Term, 1915, of said Superior Court, in a certain action therein  
pending wherein J. L. Smathers, L. E. Bayless and C. M. Hickerson, the Merchants  
and Manufacturers' Bank of Andrews, N. C., et al. are plaintiffs, and the Snowbird  
Valley Railway Company is defendant, the undersigned Commissioner of said Court  
will offer for sale at public auction, to the highest bidder, at the courthouse door in  
Murphy, North Carolina, on Monday, March 1, 1915, all the property, franchises and  
effects of the Snowbird Valley Railway Company, which includes the railroad run-  
ning from the town of Andrews, in Cherokee county, into the timber lands of the  
Kanawha Hardwood Company, in Graham county, the rolling stock and all other  
property of the said Snowbird Valley Railway Company.

The above described property will be sold upon the following terms: One-third to  
be paid in cash upon the confirmation of sale by the Court; one-half of the remain-  
der of the purchase price to be paid in one year, and the balance to be paid in two  
years from date of confirmation of sale, with six per cent. (6%) interest from date  
of confirmation.

Title to be retained until purchase price is paid in full.

Ten per cent. (10%) of bid to be paid in cash on date of sale as security for com-  
pliance with bid.

The above sale is to be made for the purpose of satisfying and discharging the  
indebtedness of the Snowbird Valley Railway Company, according to the priorities  
fixed by the aforesaid judgment in this cause.

This the 28th day of January, 1915.

J. D. MALLONER,  
Commissioner.

### COMPLETE Furniture Manufacturing Company FOR SALE

Manufactures Office Fixtures,  
Show Cases and Special Pieces of  
Furniture, in addition to General  
Repairs, and capable of making the  
highest grade of Furniture.

Now in full operation with orders  
ahead.

Satisfactory reasons for selling.

Cabinet Manufacturing Co.

W. B. VEST

Newport News, Virginia

### SALES AGENCY

In New England territory would like to re-  
present reliable concern in iron or machinery  
line, straight commission basis. Prompt at-  
tention to all inquiries. Have storage facil-  
ties—salesmen on road—equipped with busi-  
ness autos. Write for information. Address

VULCAN CO. Allston Sta., Boston

### SANTA ANNA, TEXAS

Has the most complete natural-gas system  
in the entire Southwest. Splendid water sys-  
tem. Glass sand assaying 99.53% silica. The  
best limestone in the State. Fire and brick  
shales. Large and splendid agricultural  
trade territory. Oil and gas field developing.  
Large distributing territory. We invite capi-  
tal to fully investigate our opportunities.

FRED. W. TURNER, Sec., Santa Anna Commercial Club

### WATER-POWER

FOR SALE

In a growing industrial center, 150 H. P.  
water-power, with absolute water rights, in-  
cluding buildings, with railroad and trolley  
facilities; 45 miles to Philadelphia and 4  
miles to South Bethlehem, Pa. Address Dr.  
A. O. Kiser, Bethlehem, Pa.

### TO LEASE, HAGERSTOWN MD.

All or part of 125,000 sq. ft., part of fine  
factory, splendid shipping facilities on 4  
railroads, B. & O. siding on premises, up-to-  
date sprinkler system, good labor market,  
large drawing presses and enameling ovens  
on premises.

We prefer metal-working industry with us.  
For further information apply to  
JAMES MORRISON, Jr., 244 W. 29th St., N. Y. City, N. Y.

Merchants Looking for Better Location  
with all conditions in their favor, should  
write me about new EARLE BUILDING,  
Birmingham, Ala.—five stories and basement,  
strictly modern, full fireproof construction,  
in heart of city, and one hundred feet from  
best improved corner in the South.

R. A. TERRELL

503 Title Guarantee Bldg. Birmingham, Ala.

# Bargains in Machinery and Supplies.

## Machinery Bargains

14-ton 9"x14" Porter Locomotive, 36" gauge.  
4-yd. K. & J. Dump Cars, 36" gauge.  
3-yd. All-Steel Dump Cars, 20" gauge.  
200 tons 60 and 70-lb. Relaying Rails.  
120 tons 12 and 16-lb. Relaying Rails.  
175 tons 12" 35 and 40-lb. Sheet Piling.  
50 24" 80 and 100-lb. I Beams, 30 to 39.  
300 15" 42 and 60-lb. I Beams, 15 to 18.  
200 12" 40-lb. I Beams, 15 to 18.  
40 100x15 All-Steel Frame Buildings complete, ready to erect.

Write for Free Complete List No. XB-213.

Harris Brothers Company, Owners  
CHICAGO HOUSE WRECKING CO.  
35th and Iron Sts. CHICAGO, ILL.

## PUMPS Blowers and Filter Tanks

One Deane Steam Pump, No. 16165, horizontal duplex double-acting compound non-condenser plunger and ring pattern, 14-20-12-18.

One Worthington Steam Pump, No. 100,182, size 7½x14x10.

Filtration Plant, manufactured and installed by New York Continental Jewell Filtration Co., original cost \$8500, consisting of 4 filter tanks 16 ft. in diameter by 8 ft. high, with 2 ft. of sand in each; worth \$1000. Also, P. M. Roots Co. 4-in. Centrifugal Blower, size 2, No. 27271, with upright engine, No. 5148, made by N. Y. Steam Power Co., for operating same.

**John C. Stearns**

N. Y. Life Bldg., Kansas City, Mo.

## Here's a Splendid Revolving Stone Screen At Less Than Cost

42"x18", heavy trunnion type. Perforations as follows:  
4" 6"-¾" holes. 4" 6"-1½" holes.  
4" 6"-1" holes. 4" 6"-3" holes.  
With dust jacket, outside the bars of iron pipe, steel trunnion rings, complete, with 45° drive pulley. Weight about 9000 pounds. For \$480, f. o. b. Wheeling.

Better wire for immediate shipment. A full line of portable and stationary stone crushers, elevators, trucks, engines, pulverizers, for every rock-crushing purpose.

WHEELING MOLD & FOUNDRY CO.  
900 Raymond St., Wheeling, W. Va.

## SAWMILL MACHINERY

1 Lidgerwood Steel Frame 4-Line Combination Pine Slicer and Loader \$6500.00  
1 10"x10" Lidgerwood Overhead Skidder 3250.00  
1 No. 3 Wickes Gang 1250.00  
1 500-800 H. P. Clark Corliss Engine (new) 2500.00  
Sawmills, Edgers, Log Hauls, Live Rolls, Conveyor Systems, Filing-Room Equipment, Saws, etc.  
Planers, Moulders, Timber Sizers, Blowing Systems, etc.  
Drykiln Pipe, Headers, Traps, Trucks, Tracks, etc.  
Engines, Boilers, Gas Engines, Dynamos, Motors, etc.  
Pulleys, Shafting, Hangers, Boxes, etc.  
Relay Rail, Locomotives, Cars, Skidders, etc.  
We CAN SAVE YOU HALF ON LARGE and SMALL ITEMS of USED EQUIPMENT.  
SOUTHERN MACHINERY EXCHANGE, Jacksonville, Fla.

## Boiler For Sale

By Lorick & Lowrance, Inc., one 75-horsepower Horizontal Return Tubular Boiler, 60 inches by 15 feet, half-arched front, fire box, grate bars and fixtures. Manufactured by Nagle Boiler & Engine Works. Price \$400, f. o. b. Columbia, S. C.

For Sale—Cheap Before Removal  
Special lot of

Electrical and Rolling Mill Equipment  
Write for List and Prices.

We buy the entire equipment of Industrial Plants. What have you for sale?  
W. L. BIRTWELL, Crozer Bldg., Philadelphia

## FOR SALE CHEAP

One Land Pile Driver, 3000-lb. hammer, 50 ways and steel rollers.  
One Steel Stack, S. S., 6"x100'.  
One Steel Stack, S. S., 10"x150'.

CENTRAL TRANSFER CO.

415 N. Front St. BALTIMORE, MD.

## AT A BARGAIN

3 Lidgerwood Hoisting Engines, cylinders 8½x10, D. D., D. C., first-class condition.

1 Wetherall Twin Corliss Engine, cylinders 20x42, first-class condition.

2 5" Worthington Turbine Pumps, D. C. to 85 H. P. motors.

Plants Bought and Dismantled

BOSTON IRON & METAL CO.

Pratt St., BALTIMORE, MD.

## FOR SALE

One Ice Engine and Machine; also a Russell Four-Valve Simple Engine, 15x18, 200 R. P. M., almost new, and a Russell Four-Valve Engine, 16x24, 150 R. P. M., belt connected to a 100 K. V. A. Westinghouse Generator, 2300 volts, 3-phase, 60-cycle, 900 R. P. M., direct connected to a 3 K. W. Westinghouse Exciter, 125 volts. Address

## POWER EQUIPMENT

Care Manufacturers Record, Baltimore, Md.

## ENGINE BARGAINS

Corliss Hoisting Gasoline

16x30 Reliance Corliss Engine  
16x36 Bates Corliss Engine  
16x42 Harris Corliss Engine  
20x42 Ramming Corliss Engine  
Hoisting engine, double drum with vertical boiler, 6 H. P. only \$175.00.  
20 H. P. St. Mary's gasoline engine good as new, used 1 month, \$225.00.

CHAS. N. BRAUN

1311 E. Lewis Street Fort Wayne, Ind.

## FOR SALE PIPE Second-Hand

All Sizes, ½" to 24"

Furnished with new threads and couplings, suitable for every practical purpose.

Also large assortment of Contractors' Equipment, Hoisting Engines, Boilers, Concrete Mixers, etc.; all thoroughly overhauled.

Marine Metal & Supply Co.  
167 South St. NEW YORK

## FOR SALE

PIPE NEW & SECOND HAND

Furnished with Threads and Couplings.

Suitable for All Practical Purposes

All Sizes In Stock Ready for Shipment

Send us your inquiries and get our prices. It will interest you.

Eagle Pipe Supply Company, Inc.  
45 Broadway N. Y. C.

## PIPE

FOR ALL PURPOSES

Slightly used Pipe from 1" to 12" with new threads and couplings. Thoroughly overhauled and tested before shipping.

We can save you money

Jos. Greenspon's Sons Iron & Steel Co.  
St. Louis, Mo.

## Pipe Machine For Sale

One 8" Pipe Machine, almost new, cutting and threading from 2" to 8", inclusive; complete with countershaft, dies and cutters. Machine perfect in every way, and will be sold cheap. Address

THE BIALY HARDWARE CO.

Bay City, Mich.

## FOR SALE

We offer the following equipment for immediate delivery f. o. b. Charlottesville, Va.: Price.

1 200 H. P. Coatesville Return Tubular Boiler, complete, with front and fittings \$250.00  
1 150 H. P. Coatesville Return Tubular Boiler, complete, with front and fittings 200.00  
1 500 H. P. American Feed Water Heater, made by Whitlock Coil Pipe Co. 150.00  
1 60" Buffalo Forge Fan, 23x22" openings 25.00  
1 100 K. W. General Electric 550-volt D. C. Type M. P. 680 R. P. M. Generator with panel 500.00  
3 150 K. W. General Electric 550-volt D. C. Type C. L. B. 525 R. P. M. Generators with panels, each 600.00  
2 150 K. W. General Electric Form P 2300-volt 3-phase 60-cycle Alternators, each, with panels 800.00  
500-volt D. C. Motors with Pulleys, Bases and Starting Boxes.

1 40 H. P. 950 R. P. M. Westinghouse, shunt wound \$300.00  
1 30 H. P. 675 R. P. M. Westinghouse, Type S 200.00  
1 25 H. P. 875 R. P. M. General Electric, D. L. C. Type 200.00  
1 20 H. P. 925 R. P. M. General Electric, D. L. C. Type 175.00  
1 20 H. P. 1040 R. P. M. Westinghouse, Type S 150.00  
1 15 H. P. 925 R. P. M. G. E. 125.00  
2 10 H. P. 1400 R. P. M. G. E., each 100.00  
1 10 H. P. 950 R. P. M. Westinghouse 100.00  
3 5 H. P. 1200 R. P. M., each 50.00  
220-volt Direct-Current Motors, starting boxes and pulley 45.00  
1 7½ H. P. 1400 R. P. M. Kester 45.00  
1 3 H. P. 1500 R. P. M. General Electric 35.00

We also have a number of smaller 220-volt D. C. motors, vacuum cleaners, meters, fans, ceiling and desk, massaging machines, etc. Write us.

CHARLOTTESVILLE & ALBEMARLE RAILWAY COMPANY  
CHARLOTTESVILLE, VA.

## USED MOTOR CARS AND TRUCKS

ASK FOR LATEST LIST TODAY

MAR-DEL MOBILE CO.  
BALTIMORE, MD.

REFERENCES—BRADSTREET OR DUN.

## CASKS FOR SALE

Heavy, well-made iron-bound casks, 42" diameter middle, 35" diameter ends, 42" high, 1¼" thick, in sound condition, with both heads in. Sold singly or in car lots.

N. & G. TAYLOR CO.

Third and Chestnut Sts. Philadelphia, Pa.

## SAFES

Three very fine burglar-proof safes, suitable for bank, factory or large mercantile house. Rare bargain. A full line of new and used safes.

THE HOWE SCALE CO.

CINCINNATI, OHIO

## 2nd-Hand Machinery

### CORLISS ENGINES

COMPOUND: 32 & 62x60 Allis H. C. C.—26 & 54x60 Allis H. T. C.—22 & 44x48 Monarch.—18 x 32x42 Allis.—14 & 28x36 L. & B. H. C. C. SIMPLE: 36x30 Corliss; 30x60 H. & B.; 28x48 Ham.; 24x48 Allis; 24x48 Twin Nordberg; 22x42 Ham.; 18x42 St. Louis; 3-16x42 Ham. St. Louis; 16x36 St. Louis; 3-14x36 St. Louis, Ham.; 13x36 H. Duty Corliss.

### BOILERS

2 125 H. P. B. & W., 150 lbs. pressure.  
200 H. P. Erie City, 150 lbs. pressure.  
200 H. P. Heine, 160 lbs. Marine Casing.  
4 250 H. P. Edgemore, 150 lbs. pressure.  
2 250 H. P. Sterling, 150 lbs. pressure.  
4 250 H. P. Heine, 100 lbs. pressure.  
2 300 H. P. Edgemore, 175 lbs. pressure.  
2 300 H. P. B. & W., 160 lbs. and stokers.  
350 H. P. Heine, 150 lbs. pressure.

### A. C. UNITS 3 PHASE 60 CYCLES

K.W. Make. Volts. Rev. Engine.  
50 Burke 440 3600 Kerr Turb. (Steam).  
125 Westge. 240 3600 Parsons Tur. (Steam).  
165 Westge. 440-220 225 18x18 Erie City.  
250 Ft. Way. 2300-225 3600 H. P. B. McBeth Gas.  
300 Westge. 440-220 200 Westg. Vert. C. Comp.  
300 G. E. 480 200 24x22 Erie Ball.  
2 300 G. E. 550-440 225 1 Comp. & 1 simple Harr'g.  
400 G. E. 2300-120 Mc. I. & S. Vert. C. C.  
2 400 G. E. 2300 150 18 & 36x30 Buckeye.  
3 500 Westg. 2300-440 3600 H. P. Westg. St. Turb.  
600 Westge. 440 90 32x48 Allis Corliss.  
1000 Westg. Any 1800 Low-pres. Turb.  
1000 Ge. El. Any 1800 Mix.-press. Curtis.  
2 1000 Westg. Any 1800 H. P. Westg. St. Turb.

### D. C. UNITS—250 Volts

K.W. Make. Volts. Engine.  
400 Ft. Way. 250 24x27 Buckeye R. H.  
400 G. E. 275 16 & 30x24 Erie Ball.  
250 Westge. 3-Wire 16 & 31x27 Erie City.  
300 Westge. 3-Wire 19 & 32x24 Ridg'g H. C. C. Car.  
220 G. E. 275 27x18 Ball & Wood.  
200 Westg. 3-Wire 17 & 28x20 Ridg'g H. T. C.  
160 G. E. 3-Wire Ridgway Tand. Comp.  
100 Westg. 3-Wire 12 & 20x16 Ridg'g T. C.  
50 C. W. 250 11x12 Chuse Auto.  
35 G. E. 250 Curtis Steam Turb.  
20 Trl. 125 8x9 Chuse Auto.

### Harold R. Wilson Machinery Co.

419 Pine St. Other Sizes St. Louis, Mo.

### Second-Hand Boilers

All good for 100 lbs. pressure—ready for immediate delivery—offered complete with usual castings and fittings.

#### HORIZONTAL TUBULAR

3 72"x18" "Penna. Boiler Works."  
1 100 H. P. "Erie City Iron Works," economic type.  
1 60"x16" "Sotter Bros.," flue type.

#### VERTICAL

1 48"x11' 1 36"x8' 1 36"x6'.  
1 42"x7' 1 36"x7' 1 30"x5'.

We have also in stock at especially low prices, new vertical boilers from 1½ to 25 H. P. We are having printed at the present time a complete list of steam and electric power equipment, metal and wood working machinery. May we send you one?

L. F. SEYFERT'S SONS, Inc.

437 North Third St. Philadelphia

### YOU CAN SAVE 50%

IN THE PURCHASE OF A-I APPARATUS SPECIALS

400 K. W. Westinghouse-Parsons 60-cycle, 2 or 3-phase, 440-volt, with condenser.

300 H. P. Smith, type E, Gas Producer Plant, complete.

PAUL STEWART & CO. CINCINNATI, O.

## BUSINESS FOR 100,000,000

It's going to take some hustling to supply the needs of our own population. Don't let the European war take all your thought.

GET BUSY  
Manufacturers Record  
BALTIMORE, MD.



# Bargains in Machinery and Supplies.

In replacing our manufacturing equipment we find the following first-class

## Used Machine Tools

which we offer at attractive prices

18"x6" Reed.  
17"x6" Gray.  
20"x8" Lodge & Shipley, Q. C. G.  
20"x10" Lodge & Shipley, Q. C. G.  
20"x12" Lodge & Shipley, Q. C. G.  
24"x8" Lodge & Shipley, Q. C. G.

### SPECIAL LATHES

No. 3 Lodge & Shipley Rapid Reduction Lathe.  
24"x17" Lodge & Shipley Chucking Lathe.  
14"x8" Towley Speed Lathe.  
2 18"x8" Lodge & Shipley Single Pulley Driven Lathes.

### METAL SAWS

Globe Power Hack Saw, 8" capacity.

### MISCELLANEOUS MACHINES

One Marion Double Grinder.  
One Marion Double Grinder on stand.  
One Diamond Combination Grinding and Polishing Stand on column.  
One Sturtevant Blower, diameter of outlet 24".  
One "Ohio Planer," 24"x24"x12", with two heads on cross rail.  
Universal Swivel Table for Radial Drill.  
Brown & Sharp Grindstone Frame for 5"x26" stone.  
One Mueller Grindstone Frame for 4"x27" stone.  
One 12"x40" Mumford Molding Machine.  
Write for complete description with prices of machines in which you are interested.

The Lodge & Shipley Machine Tool Co.  
CINCINNATI, OHIO

### Special Bargains in Sanders

1 42" 3-drum Perfection Sander, thoroughly overhauled. \$350.00  
1 42" 3-drum Thomas Sander. \$400.00  
1 48" 4-drum H. B. Smith Sander. \$500.00  
1 48" 3-drum Royal Invincible Sander, used only 3 weeks. \$550.00  
1 54" 3-drum J. A. Fay & Co., fine order. \$500.00  
1 60" 3-drum Columbia Sander in A-1 condition. \$600.00

### JOINTERS

1 20" Carrey Hand Jointer. \$100.00  
1 30" Buas Extra Heavy Hand Jointer. \$125.00  
Woodworking machinery of all kinds.  
Write, stating your requirements.

CLEVELAND BELTING & MACH'RY CO.  
1922 Scranton Road Cleveland, O.

We do not make extravagant statements about the condition of our

## Used Machinery

We have made and intend to retain our reputation for reliability.

### Prentiss Tool & Supply Co.

Singer Bldg., NEW YORK

### DIESEL OIL ENGINES

Two 75 H. P. Three-Cylinder Belted Type; seen running. Bargain.

POWER EQUIPMENT COMPANY  
500 Fifth Avenue, New York

### Rebuilt Leather Belting

Half price new equal quality, less stretch, equal service. Less price cheap new, better service. All sizes, guaranteed. New leather, rubber, canvas, factory prices. We buy good leather belting. Salesmen and selling agents wanted.

FREEDRICH BELTING CO., Manufacturer, St. Louis, Mo.  
Please mention Manufacturers Record.

### MOTORS AND DYNAMOS

5 7 1/2 H. P. Wagner, 220 V., 1100 R. P. M., \$75.00  
3 4 H. P. Interpole, 500 V., 1500 R. P. M., 60.00  
2 15 H. P. C. & C., 500 V., 950 R. P. M., 140.00  
2 25 H. P. Fairbanks, 3-ph., 60-cycle, 220 V., 1200 R. P. M., 200.00  
All machines are complete and fully guaranteed. Write for our monthly Bargain Sheet.

PAN ELECTRIC MFG. CO., 735 S. Fourth St., ST. LOUIS

### D. C. UNITS, 250 VOLTS

300 K. W. Crocker-Wheeler, Wetherill engine. \$8500.00  
100 K. W. General Electric to Ballwood engine. \$2900.00  
75 K. W. Crocker-Wheeler to Harrisburg engine. 1450.00  
55 K. W. C. & C. to Harrisburg engine 1000.00  
35 K. W. Crocker-Wheeler to Ames engine. 900.00  
Send for catalog.

Geo. Sachsenmaier & Co 143 N. 3d St., Phila., Pa.

## FOR SALE

1—75 K. W. Bullock 60-cycle, 3-phase, 220-volt Alternator, direct connected to 12x15 Skinner Automatic Engine. Practically good as new.

1—16x22 Atlas Left-Hand HEAVY-DUTY 4-Valve Engine. Wheel 9 feet in diameter by 22 1/2-inch face.

3-100 H. P. each 66"x18" BUTT STRAPPED, TRIPLE RIVETED Horizontal Tubular Boilers Complete.

### Pfannmueller Engineering Co.

Suite 1733 First National Bank Bldg.

CHICAGO

## BARGAINS

1 25 H. P. Triumph, 110-125-volt, compound wound, D. C. Motor or Generator.  
1 37 1/2 K. W. Westinghouse 125-volt Generator.  
1 3 H. P. Westinghouse 3-phase A. C. Motor.  
1 each 2, 5 and 10 H. P. General Electric 3-phase Motors, 1200 R. P. M.  
1 8"x8" Ingersoll Belt-driven Air Compressor.  
1 8"x8" Ingersoll Duplex B. D. Compressor.  
1 10 1/2"x12" Ingersoll-Rand B. D. Compressor.  
Refrigerating Machines, 2 to 100 tons.  
Gas Engines, 2 to 500 H. P.  
Motors, all sizes, A. C. and D. C.

### THE ASSETS PURCHASING CO.

WHEELING, W. VA.

## WIRE ROPE

We have accumulated a stock of wire rope that we offer at bargain prices. The lengths run from 60 to 3000 feet, from 3/4 to 1 1/2 inches diameter. These are new ropes and perfectly good for a variety of purposes, but are of construction different from our regular stock ropes. It will pay you to get a list of these with our prices.

### Broderick & Bascom Rope Co.

805 N. Main St. ST. LOUIS, MO.

### WE HAVE

### 16 Water-Tube Boilers

200-400 H. P.

### FOR SALE CHEAP

EDGAR M. MOORE & COMPANY  
PITTSBURGH

### Tampa Machinery Exchange

TAMPA, FLA.

Buy, Sell and Exchange Machinery of All Kinds

WRITE US YOUR WANTS

## FOR SALE

Boilers, Stationary Engines, Hoisting Engines, Pumps, new and second-hand, every size and for every duty.

### HOWARD W. READ COMPANY

Third and Arch Sts. Philadelphia, Pa.

### SPECIALS

18x42 Lane & Bodley Corliss Engine, 2 years' service, \$450.  
Three 72"x18" H. R. T. Boilers, 2 years' service, 150 pounds pressure, \$400.  
500 H. P. Heine Water-Tube Boiler, 6 years' service, 150 pounds pressure, \$1675.

### DUZETS & SONS

Hudson Terminal Bldg. NEW YORK

### STEAM ENGINE AND MOTOR DRIVEN PUMP

25 H. P. 9x12 Nagle Center-Crank Plain Slide-Valve Engine in excellent condition at low price.  
Motor-Driven Centrifugal Pump, 250 gals. per min. against a 225-ft. head, practically new, at half price. Will equip with any style motor desired.  
Electrical apparatus of all kinds at lowest prices.

V. M. NUSSBAUM & CO., Fort Wayne, Ind.

### Motors, Dynamos, Switchboards, Etc.

400 H. P. G. E. Induction Motor, 720 R. P. M., 2200 volts, complete. \$3000.00  
75 H. P. Westinghouse, slip ring. 435.00  
75 H. P. G. E., slip ring, new, 850 R. P. M., complete. 500.00  
50 H. P. Allis-Chalmers, 3-phase, new, 850 R. P. M., complete. 300.00  
50 H. P. G. E., 2-phase, 850 R. P. M., complete. 245.00  
35 H. P. G. E., 3-phase, 850 R. P. M., complete. 215.00  
25 H. P. Westinghouse, 2-phase, 1140 R. P. M., complete. 200.00  
25 K. W. C. & C. to Watertown engine, 115 volts. 400.00  
30 K. W. Eddy to New York safety engine, 120 volts. 500.00  
Large stock of smaller motors and dynamos, both A. C. and D. C. Let us have your requirements.

R. Scheinert & Co., 125 N. Third St., Philadelphia

### Bargains in Rebuilt Boilers, Engines, Locomotives, Etc.

1 25 H. P. Rebuilt Fire Box Boiler, price \$300.  
1 each 40, 60 and 80 H. P. Rebuilt Fire Box Boilers, with fittings, at a bargain.  
1 each 60, 80 and 100 H. P. Horizontal Tubular Boilers.  
1 each 6, 8 and 10 H. P. Vertical Boilers, complete.  
2 16 H. P. Hoisting Engines, double drums, with boilers.  
1 25 H. P. Hoisting Engine, single drum.  
1 50 H. P. Gas Engine (used four months).  
1 10" dia. Mine Ventilating Fan, with engine.  
1 10-ton "Baldwin" Saddle Tank Locomotive, 44" gauge.  
1 30-ton "Climax" Geared Logging Locomotive, 3" gauge.  
1 each 6, 8 and 10" Electric Mine Ventilating Fans (Thayer Pat.).  
The above must be sold without reference to cost. Write us.  
SOUTH SIDE FOUNDRY & MACH. WORKS  
Charleston, West Virginia

### FOR SALE—New Lathes at Bargain Prices

Geared head 20"x10", 15"x10", 15"x8", 16"x8", 16"x6". Cone head 20"x10", 15"x8", 15"x6". All the above with semi-quick-change gears.  
Second-hand lathes with geared heads, quick-change gears, 16"x8", 16"x6", 15"x6". Second-hand lathes, cone head, plain gears, 20"x18", 27"x16", 20"x10", 18"x8", 13"x6", 13"x5".

CHAS. T. LEHMAN, Birmingham, Ala.

### THERE IS A REASON

why our properly rebuilt Machinery gives satisfaction

### ASK US

ENGINES, CORLISS: 26x48 Filer & Stowell, heavy duty; 24x48 Hamilton; 18x42 Lane & Bodley; 16x42 Allis; 14x42 Hamilton; 14x36 Nagle; 12x30 Hamilton; 10x30 Hamilton; 10x24 Hamilton.

ENGINES, AUTOMATIC: 2 21x22 Ridgway; 19x18 Ball; 14x14 Ideal; 10x16x12 Buffalo Compound; 12x14 Green; 12 1/2x13 Armstrong & Sims; 10x18 Buckeye; 9x10 New Victor; 8x14 Noyes; 8x10 McEwen; 5x6 Harrisburg.

ENGINES, THROTTLING: 20x24 H. S. & G.; 16x18 Skinner; 16x18 Ames; 14x14 Lewis, vertical; 12x13 New Enterprise; 12x14 Gibbs; 11x16 H. S. & G.; 10x12 Ajax; 10x15 Nagle; 9x16 Brownell; 8x10 New Erie; 8x10 Brownell; 7x10 Atlas; 6x6 Beggs; 3x4 Kriebel.

BOILERS, STATIONARY: HIGH PRESSURE: 1 200 H. P. for 125 lbs.; 2 150 H. P. for 150 lbs.; 3 150 H. P. for 125 lbs.; 2 100 H. P. for 125 lbs.; 2 80 H. P. for 125 lbs.; Standard from 150 H. P. to 20 H. P. for 100 lbs.

BOILERS, FIRE BOX: 150 to 10 H. P. high and low pressure.

BOILERS, VERTICAL: 100 to 4 H. P. plain and submerged tubular.

GENERATORS AND MOTORS: All sizes and kinds, belted and direct connected.

MISCELLANEOUS: Heaters, open and closed; pumps, all sizes; sawmills; corn mills and feed grinders; exhaust fans and blowers; woodworking machinery; iron-working tools; leather, rubber and canvas stitched belt; pipe, valves and engine and boiler fittings.

Sole manufacturers of the Leader Injector and Ejector. Ask for circular.

### THE RANDLE MACHINERY CO.

1734 Powers St., Cincinnati, O.

### GENERAL ELECTRIC MOTORS

220 volts, like new, about 2 years old.  
2 50 H. P., 650 compd. wound D. L. C., \$375.00  
1 50 H. P., 650 compd. wound D. L. C., 400.00  
1 25 H. P., 650 compd. wound D. L. C., 250.00  
1 25 H. P., 650 compd. wound D. L. C., 250.00  
2 15 H. P., 325 compd. wound C. V. C., 170.00  
1 15 H. P., 625 compd. wound D. L. C., 300.00  
GEO. SACHSENMAIER & CO.

143-145 N. Third Street, Philadelphia, Pa.

BEFORE buying new equipment consult our stock list of rebuilt machines. Copy mailed upon application. We have never had a larger assortment of power equipment machinery on hand. Every piece is rebuilt and guaranteed. Each week of the new year has shown an increased demand for machinery. Now is your opportunity to buy good used machines right. Representing some of the leading manufacturers of Power and Electrical Equipment, Machine Tools and Woodworking Machinery, we carry stocks in our warehouses ready for immediate shipment.

### MACHINE TOOLS

60"x60"x14" Sellers Planer, 4 heads.  
60"x60"x14" Pond Planer, 2 heads.  
48"x48"x15" Sellers Planer, 2 heads.  
72" Bickford Vertical Boring Mill, 2 heads.  
60" Sellers Vertical Boring Mill, 2 heads.  
48" Sellers Vertical Boring Mill, 2 heads.  
36" Bickford Radial Drill.  
3500 lbs. Bement-Miles Double-Frame Steam Hammer.  
350 lbs. Bement-Miles Single-Frame Steam Hammer.  
6" Oster Pipe Machine.  
No. 3 Kempnuth Plain Milling Machine with universal dividing heads.  
36"x12" Hess Heavy-Duty Slab Milling Machine.  
12" Niles Slotter.  
38"x20" Fifield Lathe, triple geared.  
26"x12" Fifield Lathe, triple geared.  
6" Cox Pipe Machine.  
16"x6" Hendey Lathe, taper attachment.  
14"x8" Hendey Lathe.  
10" Bignall & Keeler Pipe Machine.  
30" Throat Double-End Punch and Shear, weight 3500 lbs.  
14"x5" Lodge & Shipley Lathe, pan bed, taper attachment.  
30 new Lathes 14 to 20" in stock; immediate delivery.

### POWER EQUIPMENT

#### Boilers

2 250 H. P. Sterling Water Tube, 150 lbs. steam working pressure.  
3 250 H. P. Franklin Water Tube, 150 lbs. steam working pressure.  
1 150 H. P. Babcock & Wilcox Water Tube, 150 lbs. steam working pressure.  
6 150 H. P. 72"x18" Horizontal Tubular, 125 lbs. steam working pressure.

### CORLISS ENGINES

24"x42" Allis, left hand.  
18"x42" Watts-Campbell, right hand.  
16"x36" Allis, left hand.

## FRANK TOOMEY, Incorporated

127-131 North Third Street

PHILADELPHIA, PA.

## Railroad and Contractors' Equipment and Supplies.

### Georgia Car & Locomotive Company

ATLANTA, GA.

#### LOCOMOTIVES

FREIGHT CARS

PASSENGER COACHES

S. H. Std. Car Trucks for Logging

LARGEST STOCK REBUILT EQUIPMENT IN U. S.

GEORGE M. NEWHALL ENGINEERING CO. Rolling Mills—Hyde, Clearfield Co., Pa.  
New York GENERAL OFFICES: PHILADELPHIA, PA. Pittsburgh

#### Manufacturers of LIGHT STEEL RAILS

12, 16, 20, 25, 30, 35, 40 and 45-lb. SECTIONS  
SPICE BARS, TRACK BOLTS AND SPIKES, FROGS AND SWITCHES  
RELAYING STEEL RAILS  
IN ALL SECTIONS FOR IMMEDIATE SHIPMENT FROM STOCK

### RAILS—WAR PRICES

1500 tons 30 to 45 lb., with bars.  
2500 tons 52 to 70 lb., with bars.  
3500 tons 70 to 100 lb., with bars.  
Any delivery. Inquire for prices.  
We are always in the market for old railway material and relaying rails.HIRSCH ROLLING MILL CO.  
Office and Rolling Mills, St. Louis, Mo.

#### LIGHT STEEL RAILS

A. S. C. E. Sections  
PROMPT DELIVERY.  
8, 12, 16, 20, 25, 30, 35, 40 pounds per yard.  
With Spikes and Spikes.  
UNITED STATES RAIL CO.  
Manufacturers, Cumberland, Md.  
Certificates of Inspection by Hildreth & Co., Inspecting Engineers of New York City, assuring absolutely first quality, furnished free of cost.

#### Locomotives

##### Four wheel type

40 tons; 17"x24"; 160 lbs. pressure

Overhauled  
ModernE. H. WILSON & COMPANY  
ABRAHAM BUILDING  
PHILADELPHIA
**THAW**  
**CONTRACTORS & RAILWAY**  
**EQUIPMENT**  
 QUARRY & BRICK PLANT  
 MACHINERY  
 OUR SQUARE DEALINGS WILL WARRANT  
 YOUR CONTINUED FIDELITY.  
**& WILLIAMS** BELL BLOCK  
 CINCINNATI, O.

#### FOR SALE

One 10-ton gasoline macadam roller, latest type, standard make, nearly new. Will sell at a low price. Write

COOPER CONTRACTING COMPANY  
Care Manufacturers Record

#### Tractor-Roller and Wagons FOR SALE

A Buffalo Steam Ten-Ton Tractor and Twelve Five-Ton Wagons for use with it. Used about three months.

F. A. WOOD, County Commissioner  
St. Petersburg, Fla.

#### CONCRETE MIXERS

One No. 14 Smith Mixer with steam engine only, mtd. on steel skids, with batch charging hopper, power tilting device, auto. tipping device. Capacity, 45 cu. ft. dry, 31 cu. ft. wet. Strictly first-class condition, just as good as new. In Cincinnati stock. My MONTHLY STOCK LIST contains some exceptional bargains. Write for same.

GEORGE B. CURD Merchants Bldg., Cincinnati, Ohio

#### Hoisting Engine, Mixer and Derrick Car For Sale

One 7"x10" American D. C. D. D. Hoister with swinging gear and boiler, complete, and one No. 2 Milwaukee Concrete Mixer with 10 H. P. gasoline engine on trucks with loading skip, both good as new. Price \$800 each, f. o. b. San Antonio, Texas.  
Five-ton Dobble Traveling Derrick Car, 50-foot boom, in good condition. Price \$400, f. o. b. Fort Worth, Texas.McKENZIE CONSTRUCTION CO.  
San Antonio, Texas

### E. C. SHERWOOD

48 CHURCH ST., NEW YORK

#### STEEL RAILS

60-67s-70s-74s with angle bars  
Send your inquiries.

#### RELAYING RAILS FOR SALE

500 Tons 80-lb. Rails.  
500 Tons 90-lb. Rails.  
Several Locomotives and Cars.CHAS. HYDE  
Commonwealth Bldg. PITTSBURGH, PA.

#### RAILS

#### AND ACCESSORIES

#### NATIONAL STEEL RAIL CO.

I. H. COHN, Pres. and Genl. Mgr.  
1030-32 Pierce Bldg. ST. LOUIS, MO.

### RAILS LOCOMOTIVES

#### RELAY RAILS

LOCOMOTIVES—Narrow and Standard Gauge. 150 Locomotives at our shops, 6 to 80 tons. Freight and Passenger Cars.

Largest Stock Locomotives  
in United StatesSouthern Iron & Equipment Co.  
ATLANTA, GA.

#### RELAYING RAILS

20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 80, 85, 90 and 100 lb., all with Fish Plates.

#### NEW RAILS

8, 12, 16, 20, 25, 30, 35, 40, 45 lb., at manufacturer's prices.  
LARGE TONNAGES—Carload and less carload lots, advantageously located for Southern delivery.Splice Bars for any section rail in stock.  
Frogs, Switches, Bolts, Nuts, Spikes, and all Track Accessories.

New and Second-hand Pipe, all sizes, with good Threads and Couplings.

Rebuilt Locomotives, Cars and Equipment.

All second-hand materials guaranteed. Subject to inspection during loading, or will ship subject to your approval at destination.

Attractive Prices. Quick Shipment.

Before buying write for our bulletin.

L. B. FOSTER CO., Park Building, Pittsburgh, Pa.

#### EQUIPMENT BARGAINS

1 Contractor's outfit: Wagons, Slip Scrapers, Dump Cars, 36" gauge.

1 Little Giant Steam Shovel.

1 Huber Traction Engine.

1 Hoisting Engine.

1 Centrifugal Pump.

1 Porter bulld Locomotive, Saddle-Tank, 7x12, 36" gauge, new.

1 standard gauge 17x24 Baldwin.

1 36" gauge 9x14 Saddle-Tank Vulcan.

1 36" gauge 9x14 Saddle-Tank Porter.

1 10x16 36" gauge Richmond Loco. Works.

6-wheel Saddle-Tank.

1 42" gauge American type Va. Iron Works, 9x16.

1 42" gauge Saddle-Tank Porter.

1 45-ton Vulcan Steam Shovel on trucks, standard gauge.

J. H. MACLEARY. SUFOLK, VA.

### Passenger Coaches

Released by Pennsylvania R. R.

HENRY LEVIS &amp; CO.

26 South 15th Street

PHILADELPHIA

### Relaying Steel Rails

35-lb., 40-lb., 56-lb., 60-lb., 70-lb., 80-lb.,  
85-lb. and Angle Bars to lay same

Advantageously located for Southern delivery; also other weights of RELAYING RAILS, in different sections of the country; and NEW STEEL RAILS, all weights. We handle first-class Relaying Rails and do not select them from scrap. Let us know your requirements. We buy Rails fit to relay, and pay spot cash.

ROBINSON &amp; ORR, Pittsburgh, Pa.

Low Prices on New FROGS and SWITCHES.

#### RELAYING RAILS

56 to 80-lb. sections, located in different parts of the country, and all equipped with angle bars to fit. Ready for prompt shipment. New or relaying light rails at low prices. New frogs, switches, bolts, spikes, etc.

HYDE BROTHERS STEEL & RAIL CO.  
610 Benedum-Trees Bldg. Pittsburgh, Pa.

### We Buy and Dismantle FACTORIES

#### MILLS

#### MACHINE SHOPS

and all kinds of

#### INDUSTRIAL PLANTS

We are always in  
the market to buy

### Scrap Iron and Steel OF EVERY KIND

#### FRANK SAMUEL

Harrison Building

15th and Market Sts. Philadelphia, Pa.

### J. E. FRANKS

Room 729 Candler Bldg.

ATLANTA, GA.

RAILS, CARS, AND LOCOMOTIVES

FROGS, SWITCHES, Etc

#### FOR SALE

LOCOMOTIVES, STEAM SHOVELS and RAILS

We have at our shops in Birmingham, thoroughly overhauled, 48 standard and 3' gauge Locomotives.

Also 10 Marion and Thew Shovels.  
Also, 3000 tons of Relaying Rails, all weights. Write us for prices and terms.

Birmingham Rail &amp; Locomotive Co., Birmingham, Ala.

#### EQUIPMENT FOR SALE

Standard Gauge.

10-34' 60,000 cap. Cars, Steel Trucks, overhauled.

1-8000-gallon; 1-6000-gallon Tank Cars.

1-25-ton Baldwin 4-wheel Switcher.

1-30-ton Baldwin 4-wheel Switcher.

"ZELNICKER" In ST. LOUIS

Other Rare Bargains

#### FOR SALE

### Relaying Steel Rails

About 700 tons, 56 lbs. per yard, with plates.  
About 43 tons, 58 lbs. per yard, with plates.  
About 600 tons, 60 lbs. per yard, with plates.  
About 800 tons, 67 lbs. per yard, with plates.

#### NEW STEEL RAILS

All Weights

### The Steel Rail Supply Co.

2 Rector St. New York, N. Y.

Locomotives, Logging Cars and Rails for Sale

1 36-ton Heisler Geared Locomotive, built in 1913, in first-class condition.

1 30-ton H. K. Porter Mogul Locomotive.

1 18-ton Climax Locomotive.

20 Logging Cars, 30,000 to 40,000 lbs. capacity.

12 miles 25, 30 and 35-lb. Relay Rails.

Located on New Orleans, Mobile &amp; Chicago Railroad.

HOWZE LUMBER CO., Inc., Mobile, Ala.

#### FOR SALE

Macadam Roller, recently overhauled. A-1 condition. Write

HAINES BROTHERS

Care Manufacturers Record

#### STEEL RAILS FOR SALE

500 tons 45-lb. Relays, 100 tons 30-lb. Relays. Complete Sawmill. Allis Band and Resaw, capacity 90,000 per day.

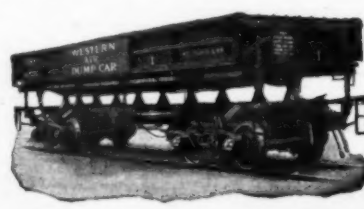
CAMPBELL LUMBER COMPANY  
Marlinton, West Va.

## Western Air Dump Cars

For handling more material in less time we especially recommend Western Air Dump Cars. Invaluable for trestle-filling, grading, etc. Are part of the equipment of many prominent railroads and contractors, and should be part of every outfit where efficiency and economy are considered. Catalog and complete details on request.

### WESTERN WHEELED SCRAPER CO.

AURORA, ILLINOIS

Earth and Stone-Handling  
Machinery



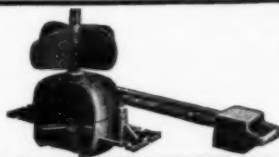
# OLIVER DUMP & SPREADER CARS

(Dumps by Air or Hand)

THE WM. J. OLIVER MFG. CO.

Only AIR DUMP CAR under absolute control of operator. Can be brought back to upright position, after passing center of gravity, before entire contents of car have been unloaded. This admits of equal distribution of material on both sides of track. Write.

KNOXVILLE, TENN.



## FROGS, SWITCHES, CROSSINGS

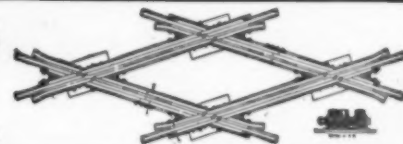
Portable and Industrial Track

THE CINCINNATI FROG & SWITCH COMPANY

Manufacturers

(1)

CINCINNATI, OHIO



Your Inquiries Solicited for Prices on  
**CONCRETE REINFORCING BARS**  
Plain Rounds and Squares or Twisted Squares Cut to Desired Lengths  
**SWEET'S STEEL COMPANY, Manufacturers**  
WILLIAMSPORT, PA.

## TRACK MATERIAL

FOR STEAM AND INDUSTRIAL RAILROADS

CONLEY FROG & SWITCH CO.

MEMPHIS, TENN.

THE AMERICAN FROG & SWITCH CO., Hamilton, Ohio  
Frogs, Switches, Switch Standards, Rail Braces

BUSINESS  
OPPORTUNITIES  
EVERY WEEK

Do you read the Business Opportunities in the  
Classified Opportunities Section every week?  
Get the habit of looking for this department  
every Thursday; it may mean money for you.  
**MANUFACTURERS RECORD**

WM. WHARTON, JR. & COMPANY, Inc.

Frogs Switches Crossings

Special Work

Guard Rail Clamps

R. C. HOFFMAN & COMPANY, Inc.

SOUTHERN SALES MANAGERS

Continental Building  
BALTIMORE

Candler Building  
ATLANTA

**RAILS** NEW AND RELAYING RAILS  
**RAILROAD BRIDGES and EQUIPMENT**  
**HENRY LEVIS & COMPANY**  
26 South Fifteenth Street PHILADELPHIA

THE WEIR FROG CO.  
Manufacturers of  
**Frogs, Switches, Crossings, Rail Braces**  
CINCINNATI, O.

## In Printing

WE will give you the practical thing  
and it will be of a dignity and style  
that will please you. We've got the equip-  
ment; we've got the experience, and we'll  
deliver the job on time and in perfect  
order.

Give us a chance to figure on your next  
big job. Our prices may not be absolutely  
the lowest, but when you get the work you  
will be satisfied with it and you will know  
that the price is low measured by character  
and quality.

**Fleet-McGinley Company**  
**PRINTERS**  
BALTIMORE, MARYLAND

## The Austin Motor Tandem Roller



is the MOST IMPROVED  
TANDEM on the MARKET  
TODAY. It has every advan-  
tage possible with steam tan-  
dems and many specially use-  
ful features not possible on any  
other Tandem. The AUSTIN  
TANDEM has won the ap-  
proval of many contractors and

others whose good judgment is based on practical experience.

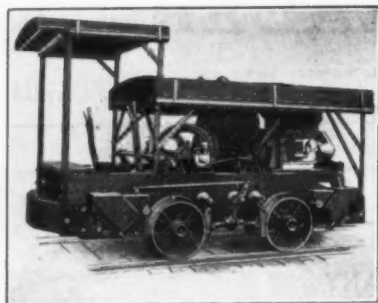
## The Aurora Steel Frame Crusher

Simplicity, strength, efficiency and durability are the leading qualities  
that were kept in mind in designing and manufacturing the AURORA  
CRUSHER. The frame is short and the machine compact and is, there-  
fore, easily moved from place to place. Aurora Crushers are built in two  
sizes. They can be furnished either mounted on trucks or on skids, with  
or without full equipment of elevators, screens and bins.



**The Austin-Western Road Machinery Co.**  
Chicago, Ill.

Representatives and Warehouses covering every State in the Union



## For Continuous Service at Minimum Cost

in Factory Yards, Lumber Plants, Mines,  
Road Work and Excavation Work of all kinds  
there is an unsurpassed saving with the

## PLYMOUTH Gasoline Locomotive

A few of their advantages: (1) Simplicity—(2) Durability—(3) Economy—(4) Efficiency—(5) Low price and Upkeep. Built in any gauge—20" to standard. Every bit of mechanism on the Plymouth is a proven success.

*Illustrated catalog with full details  
gladly on request.*

**J. D. FATE COMPANY, Plymouth, Ohio**

## GASOLINE LOCOMOTIVES

can, under favorable conditions, be economically used in industrial service. The illustration shows a Baldwin engine of this type, built for the Georgia Coast & Piedmont R. R.



This machine is designed, as far as possible, like a steam locomotive. It is strongly built in all its parts, and has a positive drive from engine to wheels.

Locomotives of this type are economical, as they consume no fuel while standing. They can be adapted to use alcohol in place of gasoline, if desired.

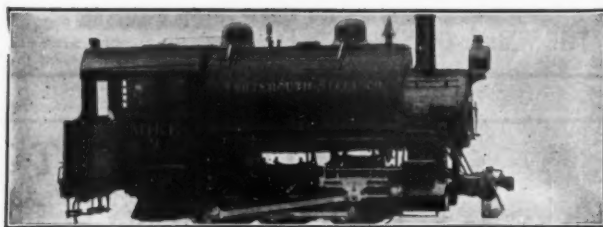
**The Baldwin Locomotive Works**  
PHILADELPHIA, PA., U. S. A.

Cable Address, "BALDWIN PHILADELPHIA"

### Represented by

Charles Riddell, 625 Railway Exchange, F. W. Weston, 50 Church Street, New  
Chicago, Ill. York, N. Y.  
C. H. Peterson, 1610 Wright Building, George F. Jones, 407 Travelers Building,  
St. Louis, Mo. Richmond, Va.  
A. Wm. Hinger, 722 Spalding Building, Portland, Ore.

## LIMA LOCOMOTIVES



### YARD OR CONTRACTORS' ENGINES.

Six wheels coupled. Power and large distribution of weights, combined  
suitable for open surface mining. Write for particulars.

### BRANCH OFFICES

NEW YORK—59 Church Street. NEW ORLEANS—Woodward, White Co., Ltd.  
CHICAGO—527 McCormick Building.

**Lima Locomotive Corporation, Lima, Ohio**

## "PORTER LOCOMOTIVES"

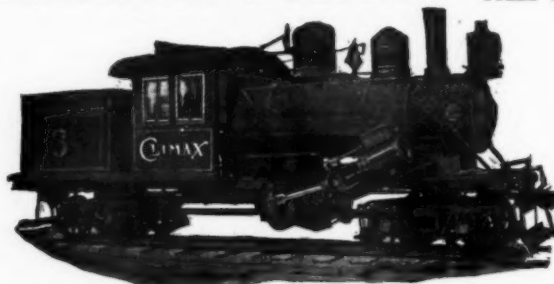


### STEAM AND COMPRESSED AIR

For all Gauges of Track and Every Variety of Service, including Mine, Furnace, Lumber, Plantation, Industrial and Contractors' use. Locomotives 36" and 56 1/2" Gauge on Hand for Immediate Delivery.

**H. K. PORTER COMPANY 412 Wood St. PITTSBURGH, PA.**

## CLIMAX IMPROVED GEARED LOCOMOTIVES FOR WOOD AND STEEL RAIL



### GET CATALOG H

**CLIMAX MANUFACTURING CO. 311 West Main St., CORRY, PA.**  
C. T. Patterson Co., New Orleans

### BRANCHES:

Chicago, 12 and 14 South Canal Street.  
New York, 362, 50 Church Street.  
St. Louis, 564 Pierce Building.  
New Orleans, 208 Godchaux Building.  
Pittsburgh, 405 Oliver Building.  
Winnipeg, 45 Canadian Life Block.  
Vancouver, 175 Cordova Street.  
St. Paul, 1308 Pioneer Press Building.  
Seattle, 617 Western Avenue, F. H. Hopkins &  
Co., 295 St. James Street, Montreal, Que.,  
Canadian Representative.



**DAVENPORT LOCOMOTIVE WORKS, Davenport, Iowa**

## THE MARION STEAM SHOVEL COMPANY

Builders of Railroad and Revolving Type Steam and Electric Shovels,  
Dipper, Elevator and Hydraulic Dredges, Scraper-Bucket Excavators,  
Ballast Unloaders, Railroad Ditchers and Log Loaders.

Station H

**MARION, OHIO**

## High Grade Hand-Made Tested



For Cranes, Dredges, Steam Shovels, Con-  
veying, Ships, Railroads, Quarries, Etc.

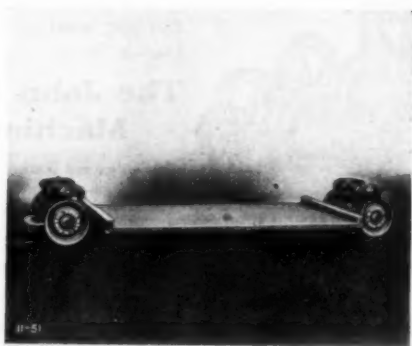
### FORGINGS

Manufactured by

**WEIMER CHAIN & IRON CO., Lebanon, Pa., U. S. A.**



## HUNT INDUSTRIAL RAILWAY



Low Car, with platform 3 ft. x 6 ft.—Steger & Sons' Piano Factory, Steger, Ill.

We manufacture cars for handling all sorts of material. Forty years of experience guarantees we "know how."

If you have material of any kind to handle ask for pamphlet R-12-1 and tell us your problem. We have doubtless solved a similar one before and can help you.

**C. W. HUNT COMPANY, Inc.**  
West New Brighton, N. Y., U. S. A.

45 Broadway, New York City  
Evans Bldg., Washington, D. C.

**American Steel & Wire Company's  
Trenton-Bleichert System**

## Aerial Tramways

We are the sole licensees in America of this type of construction. Every detail has been thoroughly worked out and we put into these constructions only material of the most approved and substantial kind, including

### American Wire Rope

No matter what the contour of the ground, we will construct a tramway that will transfer material in a bee-line at minimum expense; and no grades are too steep to surmount; no rivers or valleys too wide to cross; and no grading, bridges or viaducts of any kind are required. There is practically no limit to the length of these tramways. We have one line carrying ore twenty-one miles.

*Write for our complete descriptive book showing every form of application. And we will be glad to work upon propositions submitted to us, returning full and complete specifications and costs of construction.*

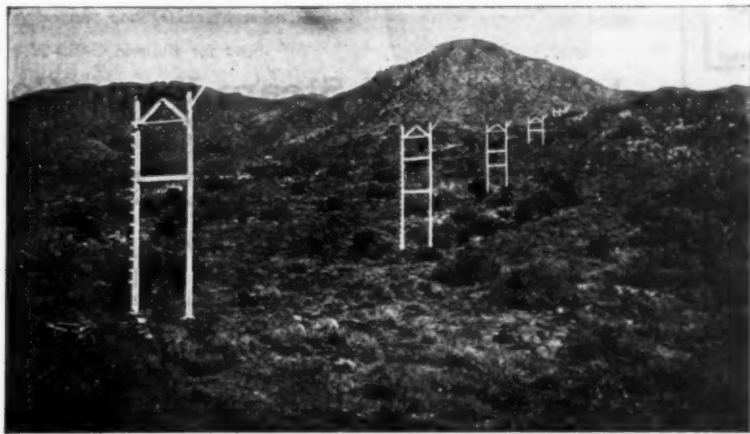
### American Steel & Wire Company

Chicago New York Cleveland Pittsburgh Worcester Denver  
Export Representative: U. S. Steel Products Co., New York  
Pacific Coast Representative: U. S. Steel Products Co.,  
San Francisco, Los Angeles, Portland, Seattle

You can have from us, if desired, a firm bid for the Lawson Automatic Tramway,

## DELIVERED AND ERECTED

It is the invariable practice of other builders to make a price delivered f. o. b. cars. The cost of erection is always at the owner's risk, under per diem supervision furnished by the builders and based only on an estimate. While this is just and equitable, the average buyer nevertheless generally prefers to know absolutely what his tramway will cost him complete and ready to run. Now he can know. Why do we have this advantage.



ACROSS THE DESERT

information which must be furnished by the purchaser. All this will be brought out by correspondence. In your original inquiry merely give us general data as to length, capacity and grade of line and kind of material handled.

Bulletins A and B describing the Automatic Tramway will be sent on request, and several other Bulletins are in preparation.

Very respectfully,

**AMBURSEN COMPANY,**

(Tramway Department)

The Ambursen Company is not a manufacturer of wire rope, but is organized as Engineer-Constructors. For ten years we have handled heavy construction amounting to many millions of dollars, in busy times having as high as 3000 men in the field.

The officers of the Company, in various capacities, have had a construction experience of from twenty to thirty years. We are therefore familiar with every detail of construction economy, and are organized and equipped to carry out work of this character on a contract basis.

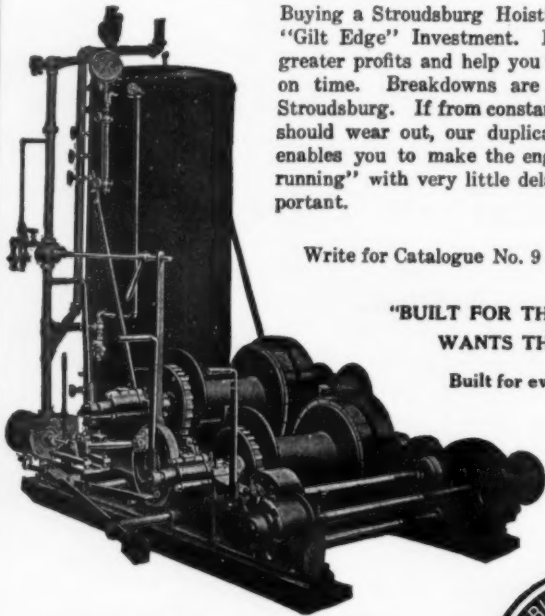
There is not sufficient space in this advertisement to set forth the character of the information

**61 Broadway, New York**

## STROUDSBURG=QUALITY

We Standardized the 125 Lbs. Pressure Hoisting Engine

Like Putting Money in the Bank



Buying a Stroudsburg Hoisting Engine is a "Gilt Edge" Investment. It will earn you greater profits and help you to finish the job on time. Breakdowns are rare with the Stroudsburg. If from constant use some part should wear out, our duplicate part system enables you to make the engine "ready for running" with very little delay. This is important.

Write for Catalogue No. 9 and full details.

"BUILT FOR THE MAN THAT WANTS THE BEST"

Built for every purpose

The Up-to-date Contractor's Favorite

**STROUDSBURG ENGINE WORKS**

Office and Works: No. 64 N. 3rd St.  
STROUDSBURG, PA.

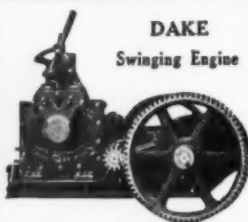


## We Manufacture Locomotive Cranes Only OHIO LOCOMOTIVE CRANE COMPANY

BUCYRUS, OHIO

Southern Offices { 94 Home Life Building  
1207 Brown-Marx Building

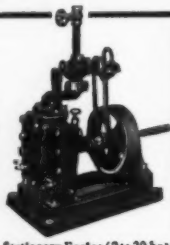
WASHINGTON, D. C.  
BIRMINGHAM, ALA.



DAKE  
Swinging Engine

WRITE FOR CATALOG OF OUR  
Drill Hoists Motor Crabs  
Steam and Air Hoisting Engines  
Motors Swinging Engines  
Pneumatic Hoists Spud Hoists

**DAKE ENGINE CO.**  
Grand Haven, Mich.



Stationary Engine (2 to 30 hp)

## LIDGERWOOD

**Steam and Electric Hoists  
for All Purposes**

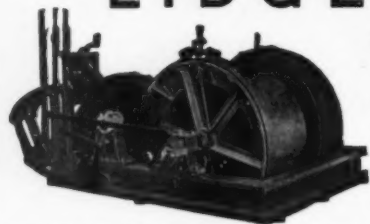
300 styles and sizes shown in our Hoisting  
Engine Catalogue.

**SPECIAL HOISTS**

STEAM Up to 1000 H. P. ELECTRIC Any Size

**LIDGERWOOD MFG. CO.**

96 Liberty St., NEW YORK



Electric Haulage Hoist built for Brown & Coker

## Flory Hoisting Engine

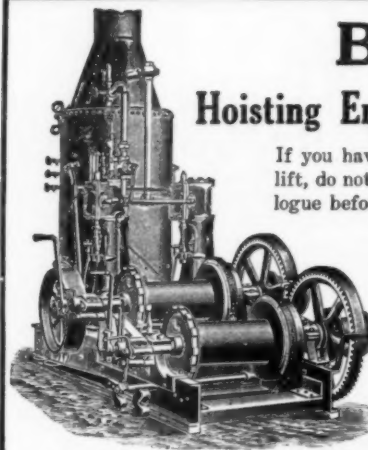
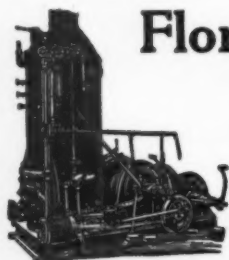
STEAM AND ELECTRIC

For Contractors, Bridge Building, Dredg-  
ing, Cableways and General  
Hoisting Duty.

WRITE FOR 1914 CATALOG

**S. FLORY MFG. CO.**

BANGOR, PA.



## BYERS

**Hoisting Engines and Excavators**

If you have digging to do or something to  
lift, do not miss getting BYERS' new cata-  
logue before you decide to buy. You may  
find just what you have been  
looking for.

**The John F. Byers  
Machine Co.**

Main Office and Works RAVENNA, O.

Branch Sales Office  
601 Sincere Bldg. CLEVELAND, O.

Builders of Steam Hoisting Engines, Excavators, Derrick Cars, Derrick Fittings, Hand  
Power Hoists, Material Elevators, and Wire Rope Blocks.

## CONNEAUT SPECIAL SHOVELS



or scientific management in the making  
and use of shovels was first advocated by  
this company in 1905. Drop us a card and  
let us tell you what it has done for others  
and what it will do for you.

THE CONNEAUT SHOVEL CO., Shovel Specialists, CONNEAUT, OHIO

## "THE STANDARD" SCALES

"THE SCALES STANDARD"

The standard of high-grade construction, accuracy, reliability, strength, durability and price.  
Capacity 1-16 oz. to 200 tons. Write for catalog No. 16.

**THE STANDARD SCALE & SUPPLY COMPANY**

Pittsburgh, Pa., 243-245 Water St.

Baltimore, Md., 409-11 N. Gay St.

## GEORGIA TALC CO.

MANUFACTURERS OF

**TALC AND SOAPSTONE POWDERS  
FOUNDRY FACINGS CRAYONS AND PENCILS**

Mines at CHATSWORTH, GA.

Main Office: ASHEVILLE, N. C.

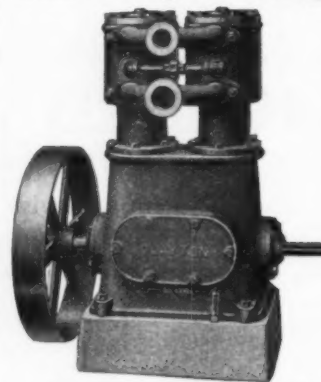
## The Clayton High Speed Self-Oiling

### Air Compressors

*Single, Duplex and Triplex*

can be Coupled Direct or Belted to  
your Electric Motor or other source  
of power. Simple, Efficient, Convenient  
and Dependable. Best Machines for Small  
Pneumatic Tools, Riveters, Air Drills,  
Cleaning Machinery, Air Hoists, Mould-  
ing machine and small Foundry work,  
and other Machine Shop Service.

Send for Bulletin C-212-29.



## International Steam Pump Co.

Clayton Air Compressor Plant

Works: East Cambridge, Mass.

New York Office: 115 Broadway

Branch Offices in All Principal Cities.

C165.1

## WICKES BROTHERS

MURPHY LITTLE CHAMPION

**ROCK DRILLS**

FOR

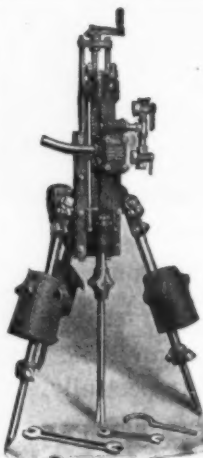
**AIR OR STEAM**

**WICKES BROTHERS**

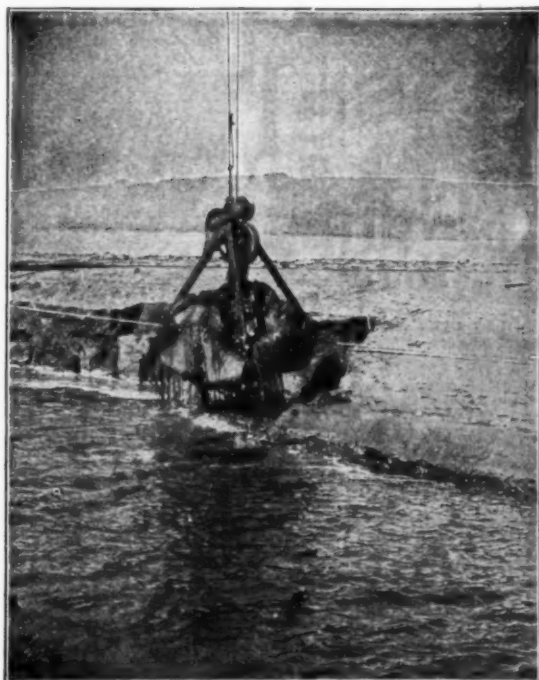
443 CLAREMONT AVENUE  
JERSEY CITY, N. J.

AGENCIES

L. M. Rumsey Mfg. Co.	-	-	St. Louis, Mo.
J. M. Alexander	-	-	Atlanta, Ga.
Moore-Handly Co.	-	-	Birmingham, Ala.
Thos. L. Barret	-	-	Louisville, Ky.
Smith Drill and Mach'y Co.	-	-	Chattanooga, Tenn.
Colonial Supply Co.	-	-	Pittsburgh, Pa.





W  
I  
L  
L  
I  
A  
M  
SB  
U  
C  
K  
E  
T  
S

## A MESSAGE FROM THE FAR WEST

The bucket shown above is one of eight WILLIAMS BUCKETS purchased and operated by The Columbia Digger Co., Portland, Ore. This bucket is digging a canal through a sand bar on the Columbia River at Rooster Rock. The material handled was a mixture of sand and clay, and they handled

**2500 Yards Per Day of Ten Hours. Can You Beat It?**

Williams buckets for every service, over 200 different sizes and types made. We can satisfy you if you will give us the opportunity.

Send for Catalog and information.

*Do it now.*

**THE G. H. WILLIAMS COMPANY**

1515 Rockefeller Building

CLEVELAND, OHIO

An Asset For  
Contractors

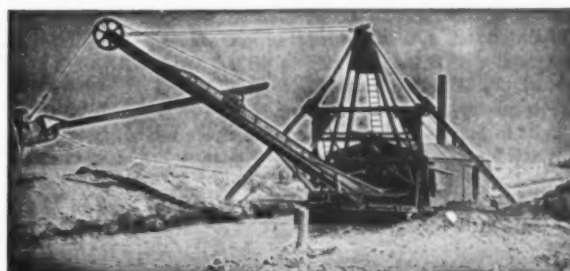
## THE BAY CITY LAND DREDGE

An Asset because—It does more work and does it more economically; low operating cost and maintenance cost; practical for both land and water use; self-propelling; quick and economical in operating; driven by gasoline engine; easily dismantled and transported; operating crew three men. These are only a few of the advantages. Full details in free illustrated catalog.

*Write today for a copy.*

Bay City Dredge Works, 2609 Center Ave., Bay City, Mich.

## American Steel Dredges



All Sizes. Steel or Wood Hulls. Vertical or Bank Spuds.  
Prompt Shipment. Send for New Catalog.

AMERICAN STEEL DREDGE CO.

FT. WAYNE, IND.

## Dredging and Excavating With One Machine



Illustration D 1361 shows machine on the scow and the steep curving hill up which it is to be moved.



Illustration D 1355 is a closer view of the machine on the scow.



Illustration D 1256 shows the Excavator being moved up the road and making a 90-degree curve. The machine was moved entirely by its own power.

**THIS** panoramic group of pictures illustrates in a most graphic manner the unusual flexibility and adaptability of the



Illustration D 1263 shows the manner in which the line was attached for propelling the Excavator.



Illustration D 1264 shows how easy it is to move the rollers from one end of the machine to the other.

## Hayward Skid Excavator

The machine was transferred from a scow to a point on shore 1800 feet away in three working days—remarkably short time considering the distance and the number of corners to be turned.

The report of the foreman in charge reads as follows:

"April 26th—Unloaded dredge from boat and after getting ashore made one 90-degree curve with engineer, fireman and five laborers, one foreman.

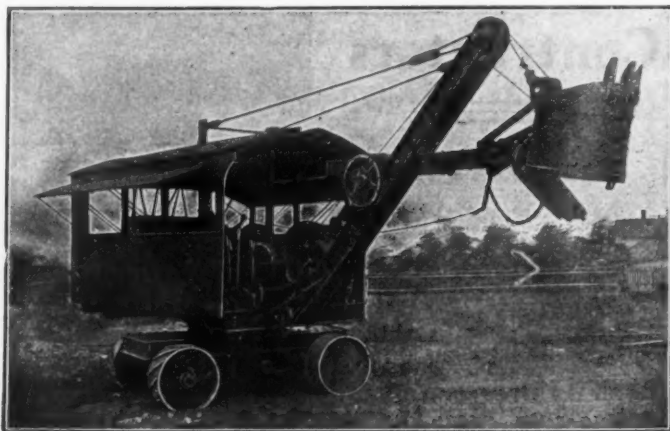
"April 27th—Moved 400 feet up a 12 per cent. grade, made one 90-degree curve with engineer, fireman, six laborers and foreman.

"April 28th—Moved 1400 feet, practically level ground, made two 90-degree curves and one 45-degree curve with engineer, fireman, six laborers and foreman."

*We have a book that will interest you. It's full of good pictures of many kinds of contracting work. Send us a postal for Catalogue 41.*

**THE HAYWARD CO., 50 Church St., New York, U. S. A.**

## Fairbanks Gasoline Traction Shovels



$\frac{3}{8}$  Cu. Yd. Full Circle Revolving Gasoline Operated Shovel.

The original and only strictly one-man shovel manufactured. Operated by internal combustion gasoline engine, thus dispensing with fireman and expenses incident to fuel and water hauling necessary with steam operated shovels.

Mounted on special wide traction wheels, thus dispensing with laying of track and men in pits.

Most practical and economical shovel manufactured for road, street, quarry, cellar or pit work.

Built in standard traction and full circle revolving.

Write for detailed information.

### The Fairbanks Steam Shovel Co.

Dept. M.

MARION, OHIO, U. S. A.

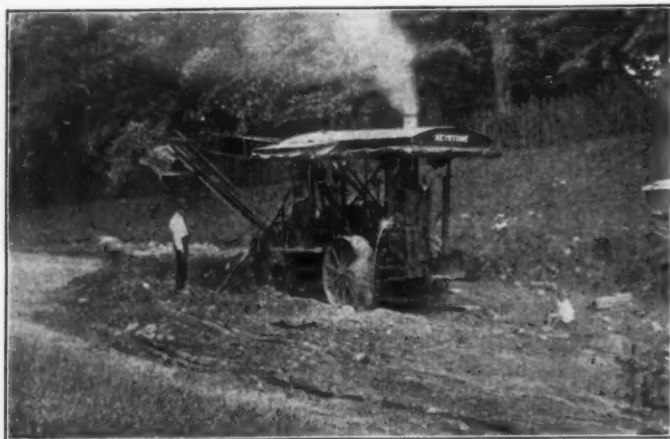
STEAM SHOVELS GASOLINE SHOVELS DIPPER DREDGES

Western Equipment Co.,  
72 Fremont St.,  
San Francisco, Cal.

REPRESENTATIVES  
Wimo Supply Co.,  
304 Oriental Bldg.,  
Seattle, Wash.

Will D. Alexander,  
412 N. Graham St.,  
Charlotte N. C.

## A Light, General Utility Steam Shovel for Contractors' Use



The cut shows machine with Skimmer Scoop for street grading and road work. It will dig a crust that would otherwise have to be broken by a roter. Leaves a flat, finished surface for paving. Operated by two men. Capacity 150 to 300 wagon-loads in ten hours.

## KEYSTONE Traction Excavator

This portable machine can be used with three kinds of scoops—adapting it to practically every grading and excavating job in the contracting field; the Skimmer Scoop for street grading; the Dipper Scoop for side hill embankments; the Ditcher Scoop for trenches, irrigation ditches, etc.

It is light—only 8 tons; portable—moving on its own power anywhere a dump wagon can go, and it is readily loaded on a freight car for shipment.

It saves both in first cost and operation over the heavier types of steam shovels. The price is surprisingly low.

We have photos of the Keystone on jobs similar to yours. Write for them and for descriptive matter.

KEYSTONE DRILL & EQUIPMENT COMPANY, Beaver Falls, Pa.

170 Broadway, New York; Monadnock Block, Chicago; Carthage, Mo.

## Let Russell Earth-Handling Machinery Move the Earth For You



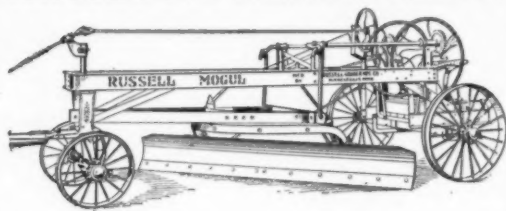
The Russell Line of Earth-Handling Machinery has proven wonderfully successful in the South. Several of the models are especially well adapted to the conditions contractors and earth handlers have to contend with in this section. The line is big and varied, so that your full requirements may be supplied by us. Elevating graders, scarifiers, several sizes of road machines, dump wagons, all kinds of scrapers, disc plows, culvert bridges, etc.

### Here Are Two Russell Machines For Your Use

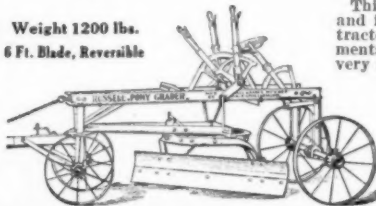
#### The RUSSELL "MOGUL"

Weight 6750 lbs.  
12 Ft. Blade, 20 in. Wide

The Largest and Strongest Road Machine Made.



Weight 1200 lbs.  
6 Ft. Blade, Reversible



This big machine has the largest capacity and is built to stand the "gaff" of 60 H. P. tractors. Has all the labor-saving adjustments of our smaller machines, making it very simple to operate.

#### The RUSSELL "PONY"

This model is made to supply the town and village demand for a one-man, two-horse machine. Can be used also with 4 horses. Quick-lift lever adjustments enable operator to raise blades over crossings without stopping team.

### Big New Catalog Describes Our Full Line—FREE

Should be studied by every contractor and road official. Describes and illustrates our full line, also gives valuable information on costs of various kinds of work.

RUSSELL GRADER MFG. CO., - Minneapolis, Minn.

Representatives in All Principal Cities



### Up Against the Bank

The American Steam Shovel is just the shovel to finish your contract quickly and profitably. Simply designed and strongly built.

New catalog. Send for a copy.

The American Clay Machinery Co.  
BUCYRUS, O.

## Monighan Drag Line Excavators STEAM AND GASOLINE POWER



The excavator shown in this cut can be placed on the work at less cost than any other excavating outfit. Crew for operating machine consists of only two men. The excavator is mounted on traction wheels provided with self-propelling mechanism. Boom is 40 feet long. One cubic yard bucket. We will give you, upon request, full information regarding capacity, cost of operation, etc.

We build excavators with booms from 40 to 125 ft. long and buckets from one to three cubic yard capacities.

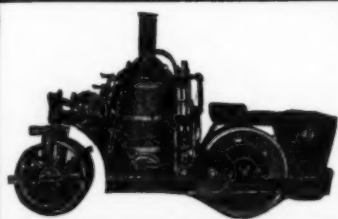
Write for Excavator Catalog

MONIGHAN MACHINE CO., 2022 Carroll Ave., CHICAGO

Agent—P. B. ENGH

341 Pacific Electric Bldg., Los Angeles, Cal.  
704 Hooker & Lent Bldg., San Francisco, Cal.  
Everett Bradt & Wright, Houston, Tex.  
Everett Bradt & Wright, Dallas, Tex.

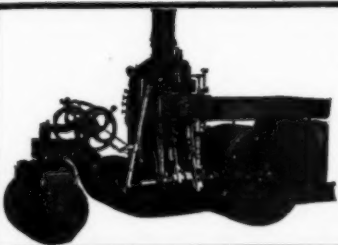
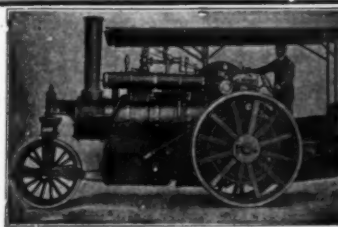
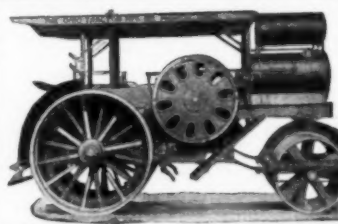


**BUFFALO PITTS ROLLERS**

BUILT FOR SERVICE

Made in all types and sizes for all purposes,  
2½ to 20 tons**Buffalo Steam Roller Co.**

BUFFALO, N. Y.

Get  
**"ERIE" ROLLERS**for LONG SERVICE  
and BEST RESULTS**ERIE MACHINE SHOPS**  
ERIE, PENNA.**ROAD ROLLERS**ALL TYPES ALL SIZES  
Steam and Gasoline**The Kelly-Springfield  
Road Roller Co.**SPRINGFIELD OHIO  
GET CATALOG**THE OHIO  
Combination  
TRACTOR-ROLLER**Gasoline Kerosene  
Saves money for the contractor.  
Two perfect machines in one.

WRITE FOR CATALOGUE

**THE OHIO TRACTOR-ROLLER SALES CO.**  
Brunson Building Columbus, Ohio  
Agencies in Atlanta, Birmingham, Chattanooga,  
Houston, Jacksonville, San Antonio**The CUMMER One-Car ASPHALT PLANT**

Capacity 2000 Square Yards 2-inch Top or Macadam Daily

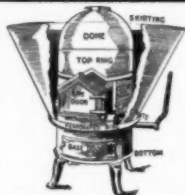
**The CUMMER ROAD ASPHALT PLANT**

Two Sizes. Three Units. Capacity 750 and 1000 Square Yards 2-inch Top or Macadam Daily

**THE F. D. CUMMER & SON COMPANY, CLEVELAND, OHIO**

Plants in Stock.

Can Show Them in Operation

**SAND DRYERS**

— FOR —

Railroads  
Foundries  
ContractorsTrolley Lines  
Industrial Plants  
Coal Companies, Etc.

MANUFACTURED BY

**The Ripley Foundry & Machine Co., Ripley, Ohio, U. S. A.****Reliance Crushers**Are fully described in our  
new CATALOG, which we send

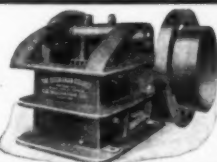
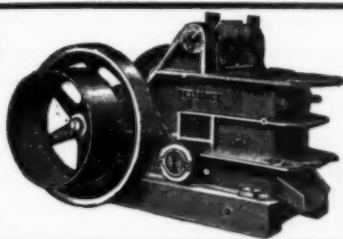
FREE

**Universal Road Machinery Co.**

KINGSTON, N. Y.

ROCHESTER

BOSTON

**Buchanan All-Steel Crushers**Crushing Rolls  
Magnetic SeparatorsCrushing Plants complete in all details from  
100 to 5000 tons daily capacity.**C. G. BUCHANAN CO., Incorporated**Main Office—90 West Street, New York, N. Y.  
Branch—1218 Chestnut Street, Philadelphia, Pa.

REPRESENTATIVE:

Chas. T. Topping Mach. Co., Bessemer Bldg., Pittsburgh, Pa.

**PULVERIZING MACHINERY**

for all kinds of materials

**THE J. R. ALSING ENGINEERING CO.**

Ask for Catalog "M"

90 West St., New York, N. Y., U. S. A.

**Street Paving  
in the South**NORFOLK  
PORTSMOUTH  
RALEIGH  
ATLANTA  
BALTIMORECHARLOTTE  
HENDERSON  
LUMBERTON  
BIRMINGHAM  
JACKSONVILLEare a few of the Southern cities  
that recognize the superiority ofContractors find from actual experience that they can lay a  
greater yardage with Aztec than with mineral asphalts.Aztec is not affected by heat or cold, and can therefore be  
used with assurances of certain success in any climate.Endorsed by leading Asphalt Experts, Highway Officials,  
Engineers, Contractors, etc.Write Us for Booklets, Quotations  
and Other Information**The U. S. Asphalt Refining Co.**

90 West Street, New York

CHICAGO  
PHILADELPHIABALTIMORE  
NORFOLK

MONTREAL

Five Points, Durham, N. C. Roads made with  
Standard Asphalt Binder "C."**STANDARD  
ASPHALT  
BINDER "C"**

Write for booklet and prices.

**STANDARD OIL COMPANY**

(NEW JERSEY)

Newark, N. J.

Baltimore Md.

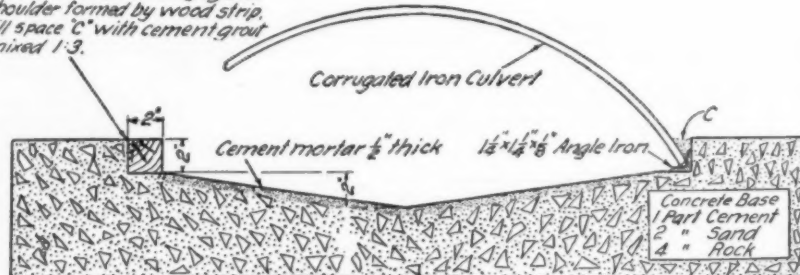
# Armco American Ingot Iron Part Circle Culverts

PREPARE CONCRETE BASE AS SHOWN IN DRAWING

We can furnish these part circles in sizes ranging from 7 inches Base and 2 inches Rise to 84 inches Base and 42 inches Rise in gauges from No. 16 to No. 10.

Will quote price on request for any size desired.

Strip of wood 2"x2" to be set in concrete, remove after concrete has thoroughly hardened, lay culvert with sides snug against shoulder formed by wood strip, fill space "C" with cement grout mixed 1:3.



Municipalities, as well as steam and electric railways, have adopted this form for surface drainage.

Part Circle Culverts properly installed are a solution of many problems of railway and street drainage. Where sufficient head-room cannot be obtained to install a full circle, a heavy-gauge arch of corrugated iron, installed between iron angles, in a well-built concrete base, and with four inches or more of closely-packed covering, will satisfactorily and permanently fill the place of a far more expensive structure.

**The Dixie Culvert & Metal Company, Atlanta, Ga.**

Greensboro, N. C.

East Point, Ga.

Jacksonville, Fla.

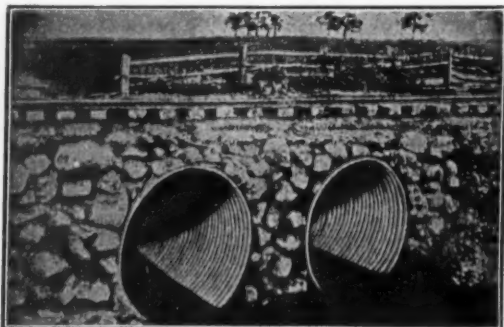
New Orleans, La.

Little Rock, Ark.

Shawnee, Okla.

**"Armco Quality Stands the Test—Dixie Service Does the Rest"**

## Virginia Metal Culverts' Strength Is Surprising



Actual use in numerous places under railroad tracks prove that they withstand any load. They are equal to severest tests. Light, corrugated, made of American Ingot Iron. Endure indefinitely. Indorsed by U. S. Government railroads, road builders, etc.

Let us answer your questions and send an attractive catalogue.

**VIRGINIA METAL & CULVERT COMPANY, Inc.**

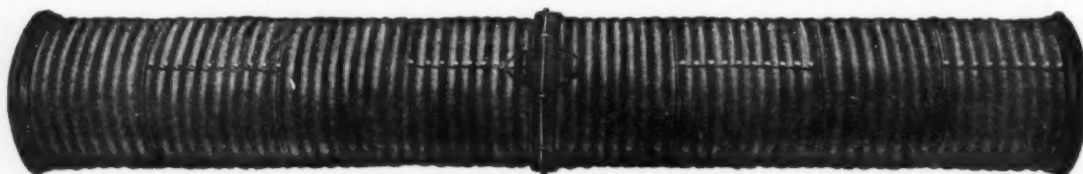
Main Office and Factory, ROANOKE, VA.

BRANCH OFFICES: 324 Dickson Building, Norfolk, Va., and Robson Prichard Building, Huntington, W. Va.

### THE RED "S" CULVERT—

The Red "S" culvert is manufactured only by this company, and every culvert you see with the big Red "S" on it, you will find that it has the angle iron reinforcements. The Red "S" is the STRONGEST on earth.

RED "S" stands for "Salisbury," "Strength," "Service" and "Stability." There is not a point in these culverts that can be improved upon. We make them as perfect as human skill can make them, and we sell them at a price which allows us to make them GOOD.



**SALISBURY—STRENGTH—SERVICE—STABILITY**

Guaranteed 25 Years.

Will Last 100 Years.

**SALISBURY METAL CULVERT CO.**

**SALISBURY, N. C.**



**Crushed and Broken Granite****Weston & Brooker Quarry Company**

LARGEST OUTPUT

QUICKEST DELIVERIES in the South Atlantic States

QUARRIES, CAYCE, S. C.

OFFICE, Columbia, S. C.

**GRANITE**MONUMENTAL BUILDING or  
CRUSHED STONE

WRITE FOR SAMPLES AND PRICES

**ATLANTIC STONE COMPANY**

Quarriers of Original "Oglesby"

835 Equitable Bldg., ATLANTA, GA.

Quarries—OGLESBY, GA.

**BALD MOUNTAIN QUARRY****PAUL & CORNELL CO.**

Newsom, Davidson Co., N. C.

**CRUSHED STONE**

(The Hardest Rhyolite)

FOR BALLAST, CONCRETE, MACADAM, ETC.

Large Output—Prompt Shipments.

Ask for Quotations

**HIGH GRADE PAVING BRICK**

BEST TESTERS AND MOST DURABLE

**THE CARLYLE PAVING BRICK CO., PORTSMOUTH, O.****HIGH-  
GRADE PAVING BRICK****COPELAND-INGLIS SHALE BRICK CO., MFRS.**

Office—610 First Nat. Bank Bldg.

Birmingham, Ala.

**AMERICAN INGOT IRON CULVERTS**Are best because purest.  
Write for special culvert catalog and information.  
Adopted by all leading Railways.  
Tanks and all Sheet Metal Products  
**ATLAS METAL WORKS**  
DALLAS, TEXAS**"GENUINE OPEN HEARTH IRON"**Corrugated  
Galvanized**CULVERTS**

TANKS, TROUGHS, Etc.

Write for a copy of our monthly "News"

**HARRY BROS. CO.**

NEW ORLEANS,

LA.

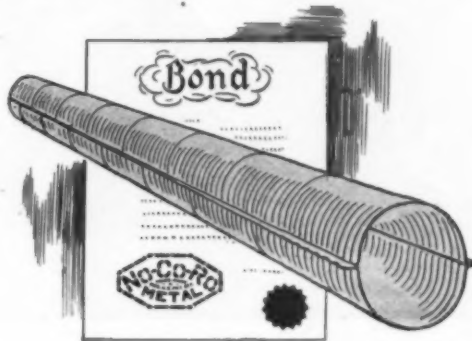
**AMERICAN INGOT IRON "ARMCO" CULVERTS**

99.84% PURE IRON

**Demand**Triangle Brand on Every Sheet  
This Triangle Trade-Mark is  
YOUR PROTECTION**TENNESSEE METAL CULVERT CO.**  
Nashville, Tenn.**"Genuine  
Open-Hearth  
IRON"**  
(99.875% Pure)**CULVERTS**Low relative prices and high quality won't mix.  
These culverts are sold on quality basis only.**THE NEWPORT CULVERT CO., Inc.**

NEWPORT, KY.

BACKED BY A

**SURETY BOND**

IS THE 99.90% PURITY OF THE NO-CO-RO METAL IN

**"ACME" (NESTABLE)**and "IMPERIAL" Riveted  
Corrugated Culverts

If you demand it, we will furnish a Surety Bond guaranteeing the purity of this remarkable anti-corrosive metal. Actual service records of impressive efficiency back up this bond. This, in addition to the well-known nestable construction advantages of "ACME" Culverts. Catalog G-9.

For quotations for delivery in North and South Carolina, address—  
**THE CAROLINA METAL PRODUCTS COMPANY**, Manufacturers in Wilmington, N.C.  
For quotations for delivery in Virginia, West Virginia and Maryland, address—  
**DOMINION METAL PRODUCTS CORPORATION**, Manufacturers in Roanoke, Va.  
For quotations for delivery in Florida and Georgia, address—  
**THE FLORIDA METAL PRODUCTS COMPANY**, Manufacturers in Jacksonville, Fla.**THE CANTON CULVERT & SILO CO.**  
MANUFACTURERS  
CANTON, OHIO, U.S.A.

Let us name you prices on

**Genuine  
"Armco" American  
Ingot Iron Culverts**  
for drainage purposes.

We Also Manufacture

**K. T. WATER GATES and  
the LENNON PATENT SMOOTH METAL FLUME****Lone Star Culvert Company**  
HOUSTON, TEXAS**FOR EFFICIENT ROAD WORK**and Economical Road Work use the Galion Steel Reversible Road Machine.  
A strong machine having all the improvements of others and many original  
with us. Made of the best material and reinforced wherever the strain comes.**GALION PREMIER STEEL  
REVERSIBLE ROAD MACHINE**Is simplest grader built, in construction and operation. Has fewest  
number of working parts of any grader on the market. You only  
have to see it in operation to appreciate its many advantages.

Catalog and full details gladly upon request

**THE GALION IRON WORKS & MFG. CO.**  
117-119  
East Main Street  
**GALION, OHIO**

SOUTHERN BRANCH OFFICES

1018 Mutual Bldg., Richmond, Va.  
112-14 S. Front St. Memphis, Tenn.116 Marietta St., Atlanta, Ga.  
403 Trust Bldg., Durham, N. C.

902 Nat'l. L. &amp; E. Bank Bldg., Columbia, S. C.





This illustration shows a White 5-Ton Power Dumping Coal Truck carrying a capacity load up a steep hill in Cleveland, Ohio. As shown in the picture, it requires seven horses and mules with three drivers to pull a similar load up this hill.

## White Motor Trucks

**I**N the beginning of trade, man was the conveyor of goods. Traffic grew, and transportation became a problem. Man was equal to the problem, and trained beasts of burden to convey his goods.

And so it was that transportation was facilitated in Egypt by the camel, in India by the elephant, in many nations by the horse, in South America by the llama, in Spain by the mule, in Lapland by the reindeer, in Syria by the ass, in Africa by the ox, in Belgium and the frozen lands by the dog.

But despite the good services of the beasts of burden, traffic grew so fast that transportation became a greater problem than ever before. And again man was equal to the problem. He made the motor truck. And so it was that transportation was facilitated in the steady conveyances of great burdens and in the prompt delivery of light loads. But the very intro-

duction of the motor truck so quickened commerce that new transportation problems have arisen.

When trade was young, the conveyance of goods by man became necessary; and then strength greater than man's was required because commerce had grown, and the beast of burden served the purpose; and then speed and endurance were needed in addition to strength, and the motor truck was introduced.

But now, to keep apace with modern progress, the requirements are more exacting than ever.

Commerce calls for a conveyance of strength greater than that of many beasts of burden combined; for speed as high as laws will sanction; for endurance beyond what is reasonable to expect; for power that never tires.

Again man has been equal to the task. He has made the White Truck.

### There's a White Truck for Every Purpose

White Trucks are of all sizes:  $\frac{3}{4}$ -ton,  $1\frac{1}{2}$ -ton, 3-ton, and 5-ton models, and for all uses. They are doing profitable work in cities, in towns, in villages, in lumber camps, on farms and milk routes, with fire departments. Under every condition, summer and winter, and at an endless variety of tasks.

The truck for your job—fitted to your needs—

given an individuality that means perfect adaptability to your hauling or delivery problems—is the truck The White Company is prepared to make for you.

Their leadership in all fields is a daily demonstration of sturdy character, mechanical correctness and high quality.

  
**THE WHITE COMPANY**  
 CLEVELAND

LARGEST MANUFACTURERS OF COMMERCIAL MOTOR VEHICLES IN AMERICA

New York - - - - - Broadway at 62nd Street  
 Chicago - - - - - 2635-2645 Wabash Avenue  
 Boston - - - - - 930 Commonwealth Avenue  
 San Francisco - - - Market Street and Van Ness Avenue  
 Baltimore - - - - - Mt. Royal and Guilford Avenues

Philadelphia - - - - - 216-220 North Broad Street  
 Pittsburgh - - - - - Craig Street and Baum Boulevard  
 Atlanta - - - - - 63-65 Ivy Street  
 St. Louis - - - - - 3422 Lindell Boulevard  
 Montreal - - - - - Forum Building

Seattle - - - - - 1514 Third Avenue  
 Memphis - - - - - 278-280 Monroe Avenue  
 Newark - - - - - 33-35 William Street  
 Dallas - - - - - 2025-2027 Commerce Street  
 Toronto - - - - - 14 Alexander Street



# OPPORTUNITIES IN THE SOUTH

— FOR —

## Manufacturers, Investors, Merchants, Farmers and Homeseekers

In the following pages leading railroads and a number of towns and cities invite your attention to the opportunities possessed by the rapidly developing South for every line of industry, for investments, and as a place for home-making in the city and on the farm.

The marvel of the day, commanding the world's attention to a greater extent probably than the development of any other section has ever received, is the amazing material unbuilding of the South. Everywhere men in every walk of life are beginning to study the South. They are coming to realize something of its matchless resources, to know something of the opportunities which it presents for manufacturing and for mining operations, for city building activities, for the utilization on a large scale of the cut-over timber lands and the reclaimable wet lands of the South.

With a view to presenting to the world from week to week the resources and the growth and the opportunities which are offered for all of these things, some of the leading railroads of the South and Southwest, some of the great public service corporations intimately identified with the upbuilding of this section and some of its progressive towns and cities from week to week tell the story of what they have to offer to the manufacturer, to the investor, to the merchant, to the pleasure-seeker, to the health-seeker. Study the pages that follow, and if you are at all interested in knowing about the South and its opportunities, its resources and its progress, if you want to keep in touch with that section which is attracting greater attention than any other part of America, get in communication with the organizations whose advertisements are to be found in the following pages.

### THE WEST POINT ROUTE

#### Atlanta & West Point Railroad THE WESTERN RAILWAY OF ALABAMA

Offers excellent locations for

**Truck, Fruit, Stock and General Farming**

Available Factory Sites. Abundance of Raw Material and Good Transportation Facilities  
Write for information.

**E. S. CENTER, General Agent, ATLANTA, GA.**

*To the*

## MANUFACTURER and DISTRIBUTOR

Abundant supplies of coal, coke, iron, timber and other raw materials lie in the regions of Georgia and Alabama which are traversed by the

### Central of Georgia Railway

Cheap electric power, numerous undeveloped water-powers, good home markets and excellent shipping facilities. Therefore, manufacturing conditions are ideal.

Many of the cities on the Central of Georgia Railway occupy advantageous positions for distributing warehouses, and a number of the larger northern and eastern manufacturers supply their southeastern trade from branch houses in these cities.

Full and detailed information upon application.

**J. M. MALLORY, Industrial Agent  
SAVANNAH, GEORGIA**

## Hosiery Mill Location

Will be glad to confer with interested parties regarding excellent location for hosiery mill. Splendid building now ready for machinery.

Healthful location, ample supply of labor, citizens of community interested in seeing development made.

### Seaboard Air Line Railway

**J. A. PRIDE, General Industrial Agent**

**NORFOLK, VA.**

## Attractive Factory Sites ON THE Illinois Central Railroad

For full particulars address the undersigned

Free books of information on farm lands issued by the  
Illinois Central Railroad

## ABOUT THE SOUTH

MISSISSIPPI—A WONDERFUL AGRICULTURAL STATE

LOUISIANA—NATURE'S GARDEN SPOT

MR. FARMER, THE YAZOO-MISSISSIPPI DELTA

IS CALLING YOU

THE PHILOSOPHY OF A NORTH MISSISSIPPI

FARM

SOUTH MISSISSIPPI, THE SETTLER'S CHANCE

Everyone who would like a Southern home or Investment should have a copy of one or all of these books. For free copies address

**J. C. CLAIR**

Industrial and Immigration Commissioner

**ILLINOIS CENTRAL RAILROAD COMPANY**

135 East 11th Place, CHICAGO, ILL.

## **Abundance of Raw Materials**

**For**

### **Woodworking Plants in Tidewater Virginia**

Enormous sources of supplies of lumber, both hard and soft woods, are available for woodworking plants located in that part of Tidewater Virginia which includes the cities of Richmond, Norfolk, Petersburg, Portsmouth and Suffolk.

Hundreds of millions of feet of lumber from North Carolina, Virginia and West Virginia are brought to this section every year both for manufacture and shipment to other parts of this country and abroad.

Additional large quantities of timber have also become available in recent years through the completion of the Virginian Railway, extending across Virginia into West Virginia, and the extension of the Norfolk Southern Railroad into new sections of North Carolina.

Every one of the seven trunk lines, with an aggregate mileage of 20,000, which have their termini in Tidewater Virginia, contributes its share to the vast quantity of timber that is brought here annually.

These extensive railway systems, as well as the water transportation lines available, offer unequaled facilities for distributing finished products to the best markets in the land.

All of which strongly emphasizes the fact that there are immense possibilities in this territory for the establishment and profitable operation of all kinds of woodworking plants.

In addition to a vast supply of raw materials and unsurpassed transportation facilities, cheap power, efficient labor and a splendid climate all combine to offer facilities for woodworking plants that are not excelled by any other locality in America.

Operating the electric light, power and railway utilities of Richmond, Norfolk, Petersburg, Portsmouth and Suffolk, the active industrial centers of Tidewater Virginia, and furnishing a service that is complete and modern in every sense of the word, the Virginia Railway & Power Company is deeply interested in the fullest development of this territory and will gladly co-operate with those seeking further information regarding specific openings for various woodworking industries.

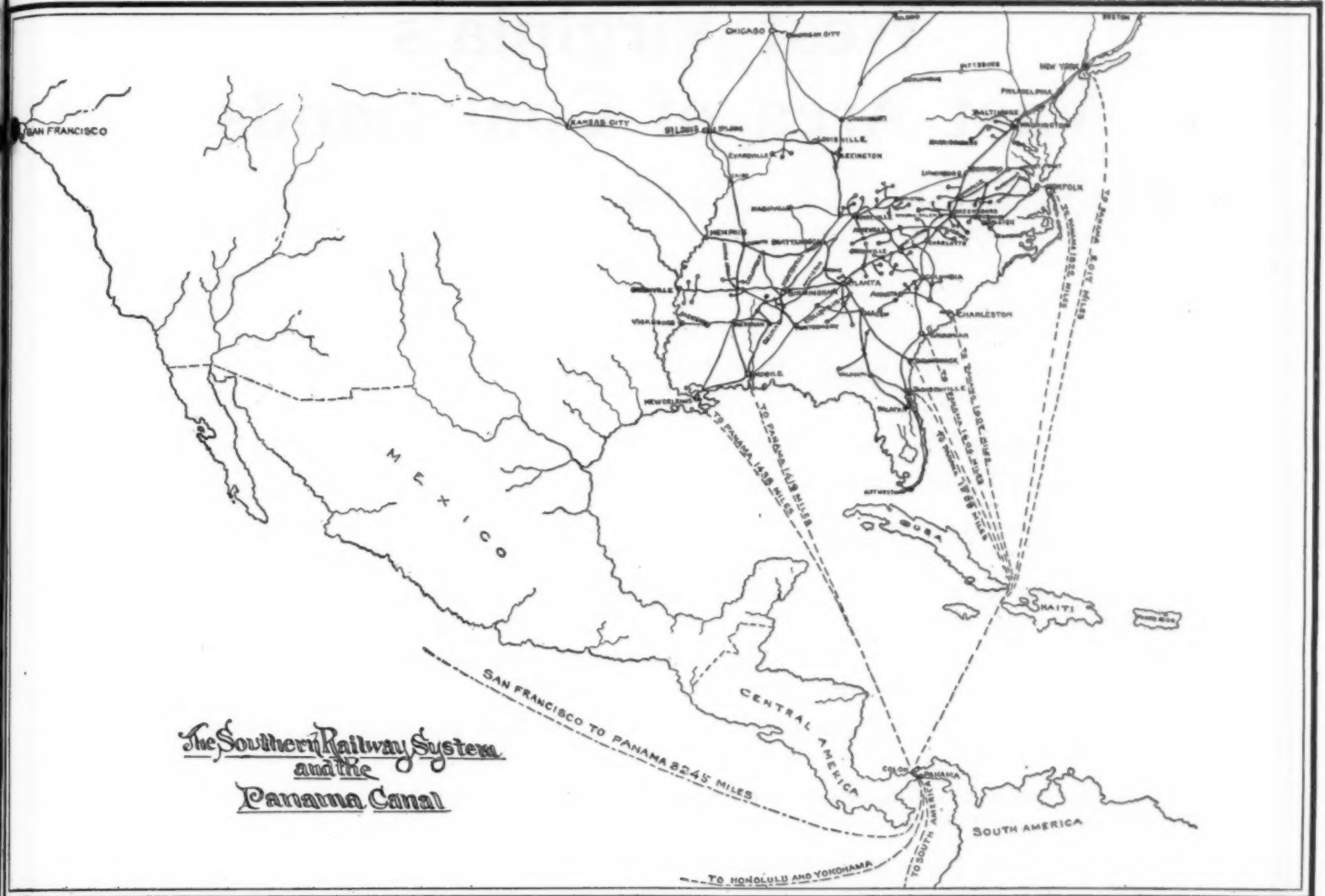
## **Virginia Railway and Power Company**

**RICHMOND****NORFOLK****PETERSBURG****PORTSMOUTH****SUFFOLK**

# **VIRGINIA**



# The Map Tells the Story



## Get Closer to South American Trade

Locate your factory amid the South's great supplies of raw materials—Cotton, Timber, Iron, Steel, Clays and Earths—where practically inexhaustible Coal supplies are convenient and cheap, where hydro-electric developments have made available more than a million horse-power, and where reliable labor is plentiful at reasonable wages.

The South American Agent of Southern Railway Company will help you find markets for your products in Central and South America.

If you want to reduce your manufacturing costs, establish a distributing warehouse, or locate in America's most charming home section, let us have an industrial agent call on you and tell you, free of cost, about the advantages of the South and Southern Railway service.

Virginia	Alabama
North Carolina	Mississippi
South Carolina	Tennessee
Georgia	Kentucky
Florida	Southern Indiana
Southern Indiana	Southern Illinois

**M. V. RICHARDS**  
Industrial and Agricultural Commissioner  
**Room 52 Washington, D. C.**

**Southern Railway**  
Mobile & Ohio Railroad  
Georgia Southern & Fla. Ry.  
Virginia & Southwestern Ry.  
Southern Ry. in Mississippi

# West Virginia's Vast Area of Coal Lands

Great Britain, Germany, France, Austria and Belgium, with a combined population of nearly 190,000,000, have an aggregate coal land area of.....17,011 sq. miles

West Virginia alone has a coal land area of..... 17,000 sq. miles

And West Virginia's coal is nearer to the surface and in wider veins, so that while in area it is practically equal to the entire coal area of all the European countries named, its quantity probably far exceeds their total coal supply.

Coal is the moving power of the industrial world.

Coal made possible the development of Great Britain's enormous wealth.

Coal gave to Great Britain for many years the Supremacy in iron and steel, and made possible the development of its vast textile interests, until Great Britain now has nearly one-half of the cotton spindles of the world.

Coal gave to Great Britain its power when the steamship displaced the sailing vessel to dominate the world's commerce through its enormous coal-driven merchant marine.

Primarily, the foundation on which the wealth and commerce of Great Britain is based is its coal, for without its coal it could never have achieved its industrial and its world-wide shipping conquests.

Following Great Britain for many years, and now surpassing Great Britain in the magnitude of its iron and steel interests, came Germany.

The marvelous expansion of Germany's foreign commerce, its wonderful advance in iron and steel, until it has become the second iron and steel producing country in the world were based on coal.

Without coal Germany could not have made these achievements.

What is true in this respect of Great Britain and Germany is true of all Europe and of all the world.

Power, and primarily that means coal, and its utilization must be the measure of a nation's material development.

In the light of these facts, study the boundless possibilities of West Virginia's coal.

The wealth and industrial power, the enormous railroad traffic, the great cities and the vast manufacturing enterprises of Great Britain, Germany, France, Belgium and Austria, created by the power of coal, give some slight hint of what nature had in store for West Virginia when it piled its billions of tons of coal mountain high and cut its mountains by rivers, making possible the construction of railroads that this traffic might flow along the lines of least resistance.

When one contemplates what coal has meant in world development, he gets a faint realization of what coal is to mean in the creation of wealth and the building of cities, the establishment of industrial interests in such a center of coal and a center so wonderfully blessed with resources of timber, of iron ore, of clays, of cement rock, and other raw materials for the widest diversity of industrial activities as West Virginia.

When to these things are added the almost limitless supply of natural gas available for manufacturing purposes, the millions of barrels of oil poured from its wells, its bracing climate and its remarkable geographical location, with the teeming West on one side and the Atlantic Seaboard on the other, and the world open for the expansion of its trade, one gets a fair idea of what West Virginia is and is to be as he studies these facts.

*Farseeing investors and manufacturers look to such a country as the best in which to operate. Write our Industrial Department for further facts.*

## Baltimore & Ohio Railroad

W. W. WOOD, General Industrial Agent  
Baltimore, Md.



# A Center Of Industry and Prosperity

Abounding not only in rich resources in minerals, timber and water-powers, but with a great cotton-growing section of the South on the one hand and the teeming West on the other, the new country opened up by the Clinchfield is indeed an "Empire in Possibilities."

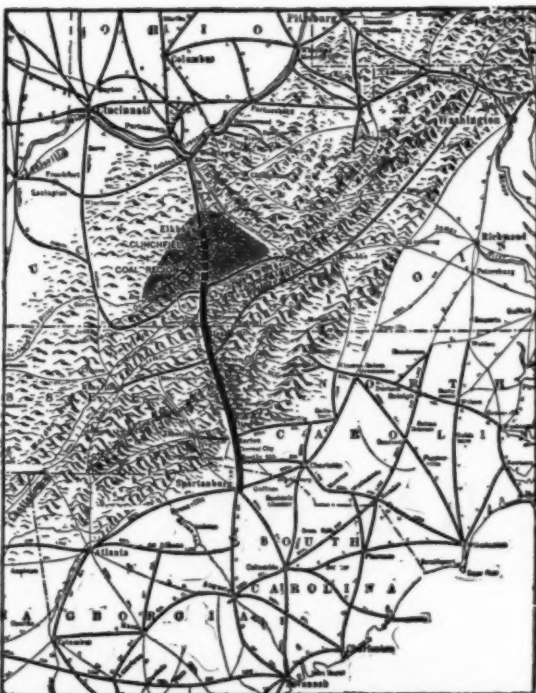
No other section close to the wonderful activities of a great nation can match in variety of opportunities this country, where since the time of man its resources have lain practically dormant, due to a lack of railroad facilities.

With the building of the Clinchfield, however, this rich country has been thrown open to the manufacturer, the investor and the farmer, and the native people are likewise awakening to the opportunities before them.

New industries are being established, new settlers locating, and on every hand can be seen indications pointing to the future greatness of this section as a center of industry and prosperity.

Investigations that have been made by experts especially employed by the Clinchfield more than verify every claim that has been made as to the quality and extent of the mineral, timber, water-power, agricultural and horticultural resources.

If you would take advantage of the opportunities offered in this new country, it is timely to investigate them now.



*Any information desired will be gladly furnished, also a copy of our illustrated booklet "The Land of Opportunities," which briefly outlines this remarkable country.*

## Carolina, Clinchfield & Ohio Rwy.

**"THE ROAD OF OPPORTUNITY"**

**R. F. BREWER, Industrial Agent**

**Johnson City, Tenn.**

# All Crops Yielding High Prices per Acre are Grown in FLORIDA

The biggest opportunity before the American farmer now is the raising of food products.

The temporary decrease in the demand for cotton, brought about by the European war, is paralleled by the certainty of an increase in demand for foodstuffs in the immediate future.

The world naturally looks to America to supply the deficiency of foodstuffs, and especially to those parts of America where diversified crops can be grown to best advantage.

The following table, based upon figures of the United States Department of Agriculture, strikingly emphasizes Florida's complete advantages of soil and climate for raising a wide range of crops that yield the highest price per acre:

AVERAGE CROP VALUE PER ACRE.

Crop.	Acreage.	Value.	Value per acre
Cotton .....	36,011,000	\$887,350,000	\$24 64
Corn .....	105,820,000	1,692,092,000	15 99
Wheat .....	50,184,000	610,122,000	12 15
Hay .....	48,954,000	797,077,000	16 28
Oats .....	38,399,000	439,596,000	11 45
Barley .....	7,499,000	95,731,000	12 76
Orchard fruits.....	4,000,000	140,867,000	35 23
Irish potatoes.....	3,668,000	227,903,000	62 13
Garden vegetables.....	2,763,000	216,257,000	78 19
Rye .....	2,557,000	26,220,000	10 25
Flaxseed .....	2,291,000	21,399,000	9 34
Tobacco .....	1,216,000	122,481,000	101 55
Peanuts .....	870,000	18,272,000	21 00
Rice .....	827,000	22,090,000	26 70
Buckwheat .....	805,000	10,445,000	12 97
Sweet potatoes.....	625,000	42,884,000	68 61
Sugar beets.....	577,000	34,420,000	59 65
Citrus fruits.....	275,000	23,000,000	83 64
Small fruits.....	272,000	29,974,000	110 19
Sugar-cane .....	248,000	21,000,000	84 68
Total.....	307,861,000	\$5,479,180,000	\$17 79

Study this table carefully.

You will note that all the high values per acre are of crops that produce abundantly in Florida.

Corn	Hay	Irish Potatoes	Tobacco	Sugar Cane	Citrus Fruits
Cotton	Rice	Garden Vegetables	Peanuts	Sweet Potatoes	Small Fruits

Crops in Florida mature earlier than elsewhere, giving this State the advantage of higher prices that come to products first reaching the market.

All along the East Coast of Florida, from Jacksonville down, are splendid opportunities for the farmer to raise these profitable crops, and any information desired will be gladly furnished.

## FLORIDA EAST COAST RAILWAY

(FLAGLER SYSTEM)

J. E. INGRAHAM, Vice-President

ST. AUGUSTINE, FLA.



# HOMESEEKERS' RATES FOR 1915

## Seaboard Air Line Railway

The Progressive Railway of the South

Announces the establishment of attractive Round-Trip Homeseekers' Rates to Progressive Florida.

TO	FROM	
	WASHINGTON, D. C.	CINCINNATI, OHIO
	January 12th, February 9th and FIRST and THIRD TUESDAYS in each succeeding month.	January 5th and 19th and FIRST and THIRD TUESDAYS in each succeeding month.
TICKETS GOOD FOR 21 DAYS		
NORTH FLORIDA		
Lake City	\$22.65	\$27.10
Quincy	24.55	25.60
Tallahassee	24.45	25.60
THE BEAUTIFUL LAKE COUNTRY		
Ocala	25.00	30.00
Orlando	25.00	30.00
Oviedo	25.00	30.00
Leesburg	25.00	30.00
Tavares	25.00	30.00
POLK COUNTY HIGHLANDS		
Bartow	25.00	30.00
PEERLESS PINELLAS		
St. Petersburg, Clearwater, Tarpon Springs, Elfers via Tampa	25.00	30.00
THE FAMOUS MANATEE COUNTY		
Palmetto, Parrish, Terra Ceia Manatee, Bradentown, Bee Ridge Oneco, Sarasota Venice	25.00	30.00
TAMPA, PLANT CITY	25.00	30.00

These tickets will be on sale at Washington, D. C., January 12th and February 9th, and two dates in each month thereafter. At Cincinnati on January 5th and 19th, and two dates in each succeeding month—the FIRST and THIRD TUESDAYS—good for 21 days. You can stop at Jacksonville, Florida's greatest city. It will repay you. Stopovers also south of Jacksonville going and returning.

The rates and service from The Nation's Capital, WASHINGTON, offers splendid opportunity to the people from the Eastern States to make a Florida trip cheaply and comfortably.

The CINCINNATI rates offer a similar opportunity to the people of the Central States.

You can find attractive openings in the progressive State of Florida. We shall be glad to answer your inquiry for complete information.

## SEABOARD AIR LINE RAILWAY

The Progressive Railway of the South

J. A. PRIDE, General Industrial Agent

NORFOLK, VIRGINIA

- Abrasive Materials.**  
Carborundum Co., Niagara Falls, N. Y.  
Vitrified Wheel Co., Westfield, Mass.
- Accountants.**  
Baltimore Audit Co., Baltimore, Md.
- Accumulator. (Hydraulic.)**  
The French Oil Mill Mfg. Co., Piqua, Ohio.
- Acetylene Service.**  
Prest-O-Lite Co., Inc., The Indianapolis, Ind.
- Adding Machines.**  
Burroughs Adding Machine Co., Detroit, Mich.
- Agricultural Implements.**  
Myers & Bro., F. E., Ashland, O.
- Air Compressors. (Stationary and Portable.)**  
Allis-Chalmers Mfg. Co., Milwaukee, Wis.  
Chicago Pneumatic Tool Co., Chicago, Ill.  
Clayton Air Compressor Works, Cambridge, Mass.  
De La Vergne Machine Co., New York, N. Y.  
General Electric Co., Schenectady, N. Y.  
Goulds Mfg. Co., Seneca Falls, N. Y.  
Laidlaw-Dunn-Gordon Co., Cincinnati, Ohio.  
Sullivan Melroy Co., Chicago, Ill.
- Aluminum Products. (Bars, Sheets, Tubes.)**  
Aluminum Company of America, Pittsburgh, Pa.
- Ammonia Valves and Fittings.**  
Frick Co., The Waynesboro, Pa.  
York Mfg. Co., York, Pa.
- Anti-Friction Metals.**  
Bailey Leiby Co., Charleston, S. C.
- Architects.**  
Diehl, Wm. Newton, Norfolk, Va.  
Gatlin, W. R., Hopkinsville, Ky.  
Milburn, Heister & Co., Washington, D. C.  
Sirrime, J. E., Greenville, S. C.
- Architects' Supplies.**  
Starrett Co., L. S., Athol, Mass.  
Weber & Co., F., Philadelphia, Pa.
- Architectural Iron Work.**  
Bolles Iron & Wire Wks., J. E., Detroit, Mich.  
Cheapeake Iron Works, Baltimore, Md.  
Schreiber & Sons Co., The L., Cincinnati, O.  
Snead Architectural Iron Wks., Louisville, Ky.
- Arc Lamps. (See Lamps) [Arc and Incandescent.]**
- Art Glass.**  
Binswanger & Co., Memphis, Tenn.
- Asbestos.**  
Asbestos Protected Metal Co., Pittsburgh, Pa.  
Southern Asbestos Mfg. Co., Inc., Richmond, Va.
- Asbestos Products.**  
Asbestos Protected Metal Co., Pittsburgh, Pa.  
Johns-Manville Co., H. W., New York, N. Y.
- Asphalt.**  
Gulf Refining Co., Pittsburgh, Pa.  
Standard Oil Co., Inc., Newark, N. J.  
U. S. Asphalt Refining Co., New York, N. Y.
- Asphalt Mixers.**  
Erie Machine Shops, Erie, Pa.
- Asphalt Paving Plants.**  
Cummer & Son Co., F. D., The, Cleveland, Ohio.
- Automobile. (Gasoline Passenger.)**  
White Co., The, Cleveland, Ohio.
- Automobiles. (Second Hand.)**  
Mar-Del Mobile Co., Baltimore, Md.
- Axles. [See Car Wheels, Axles and Trucks.]**
- Babbit Metal. [See Anti-Friction Metal.]**
- Ballast. (Railroad.)**  
American Ballast Co., Knoxville, Tenn.  
Bald Mountain Quarry, Newson, N. C.  
Chicannaqua Quarry & Const. Co., Chattanooga, Tenn.  
Kirkpatrick Sand & Cement Co., Birmingham, Ala.  
Weston & Brookner Quarry Co., Columbia, S. C.
- Bankers and Brokers.**  
Delaware Trust Co., Wilmington, Del.  
Edwards, Geo. B., New York, N. Y.  
Electric Bond & Share Co., New York, N. Y.  
Halsey & Co., N. W., New York, N. Y.  
Mercantile Trust & Deposit Co., Balto., Md.  
New First National Bank, Columbus, O.  
Nuveen & Co., John, Chicago, Ill.  
Peabody, Houghteling & Co., Chicago, Ill.  
Powell, Garard & Co., Chicago, Ill.  
Provident Savings Bank & Trust Co., Cincinnati, O.  
Southern States Development Co., New York, N. Y.
- Banks.**  
First Nat'l Bank, of Key West, Key West, Fla.  
First National Bank, Richmond, Va.  
Merchants-Mechanics' Nat'l Bank, Baltimore, Md.  
New First National Bank, Columbus, Ohio.  
National Exchange Bank, Baltimore, Md.  
Provident Savings Bank & Trust Co., Cincinnati, O.
- Bank and Office Railings and Grilles. (Iron)**  
Bolles Iron & Wire Wks., J. E., Detroit, Mich.  
Cheapeake Iron Works, Baltimore, Md.  
Cincinnati Mfg. Co., Cincinnati, O.  
Dow Wire & Iron Works, Louisville, Ky.  
Dufur & Co., Baltimore, Md.  
Dufur, Baggett & Co., Baltimore, Md.  
Eureka Supply Co., Chattanooga, Tenn.  
Meyers Mfg. Co., F. J., Hamilton, O.  
Ohio Elevator & Machine Co., The, Columbus, O.
- Barges.**  
American Bridge Co., of New York, N. Y.
- Bar Iron. (Refined and Galvanized.)**  
Bourne-Fuller Co., The, Cleveland, Ohio.  
Lackawanna Steel Co., Lackawanna, N. Y.
- Bars. (Steel, Rounds, Flats and Squares.)**  
Gulf States Steel Co., Birmingham, Ala.  
Pardee Works, Co., Perth Amboy, N. J.
- Bars, Wire, Wire Fabric, etc. (For Reinforced Concrete.)**  
Cincinnati Iron & Steel Co., Cincinnati, O.  
Corrugated Bar Co., Buffalo, N. Y.  
Hoffman & Co., Inc., R. O., Baltimore, Md.  
Jones & Laughlin Steel Co., Pittsburgh, Pa.  
Laclede Steel Co., St. Louis, Mo.
- Bearings. (Oilless.)**  
Metalline Co., Long Island City, N. Y.
- Bedford Stone**  
Bedford Steam Stone Works, Bedford, Ind.
- Belting. (Leather, Canvas, Rubber.)**  
American Supply Co., Providence, R. I.  
Bailey-Leiby Co., Charleston, S. C.  
Baltimore Belting Co., Baltimore, Md.  
Cameron & Barkley Co., Charleston, S. C.  
Cheapeake Belting Co., Baltimore, Md.  
Druid Oak Belting Co., Inc., Baltimore, Md.  
Friedrich Belting Co., St. Louis, Mo.  
Gandy Belting Co., Baltimore, Md.  
Graton & Knight Mfg. Co., Worcester, Mass.  
Main Belting Co., Phila., Pa.  
Schieren Co., Chas. A., New York, N. Y.  
Smith-Courtney Co., Richmond, Va.
- Belting. (Chain.)**  
Bartlett & Snow Co., C. O., Cleveland, O.  
Caldwell & Sons Co., H. W., Chicago, Ill.  
Jeffery Mfg. Co., Columbus, O.  
Link-Belt Co., Nicotown, (Philadelphia) Pa.
- Belt Cement.**  
Graton & Knight Mfg. Co., Worcester, Mass.
- Belt Conveyors.**  
Jeffery Mfg. Co., Columbus, O.
- Belt Dressing.**  
Dixon Crucible Co., Joseph, Jersey City, N. J.  
Gandy Belting Co., Baltimore, Md.  
Graton & Knight Mfg. Co., Worcester, Mass.
- Belt Lacing. (Leather.)**  
Graton & Knight Mfg. Co., Worcester, Mass.
- Belt Lacing and Supplies. [See Belting. Leather, Canvas, Rubber.]**
- Bicarbonate Soda. (Sap Stain Lumber Dip.)**  
Church & Dwight Co., New York, N. Y.
- Billets. (Basic Open Hearth Quality.)**  
Gulf States Steel Co., Birmingham, Ala.
- Bins (Steel)**  
Merritt & Co., Camden, N. J.
- Blackboards. (Slate.)**  
East Bangor Con. Slate Co., The, East Bangor, Pa.  
Johnson, E. J., New York, N. Y.
- Blocks. (Paving Cressed.)**  
American Cressed Works, New Orleans, La.
- Block Fillers**  
Barrett Mfg. Co., Phila., Pa.  
Standard Oil Co., Newark, N. J.  
U. S. Asphalt Refining Co., New York, N. Y.
- Blowers and Exhaust Fans.**  
American Blower Co., Detroit, Mich.  
Buffalo Forge Co., Buffalo, N. Y.  
General Electric Co., Schenectady, N. Y.  
Green Fuel Economiser Co., Matheawan, N. Y.  
Raymond Bros. Impact Pulv. Co., Chicago, Ill.  
South Atlantic Blow Pipe & Sheet Metal Co., Savannah, Ga.  
Sturtevant Co., B. F., Hyde Park, Boston, Mass.
- Blow Torches. (For Soldering and Brazing.)**  
Prest-O-Lite Co., Inc., The, Indianapolis, Ind.
- Blueprinters.**  
Childrey Co., Richmond, Va.
- Boilers.**  
Babcock & Wilcox Co., New York, N. Y.  
Bailey & James Boiler & Mch. Co., Joplin, Mo.  
Cameron & Barkley Co., Charleston, S. C.  
Casey-Hedges Co., Chattanooga, Tenn.  
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.  
Cokeville Boiler Works, Cokeville, Pa.  
Cole Mfg. Co., D., Newnan, Ga.  
Gibbes Machinery Co., Inc., Columbia, S. C.  
Harris Bros. Co., Chicago, Ill.  
Hartley Boiler Works, Montgomery, Ala.  
Jeffery-Griner Machinery Co., Philadelphia, Pa.  
Keeler Co., E., Williamsport, Pa.  
Keystone Boiler & Foundry Co., Columbia, Pa.  
Lombard Iron Works, Augusta, Ga.  
Macklenburg Iron Works, Charlotte, N. C.  
Murray Iron Works, Burlington, Ia.  
New York Central Iron Works Co., Hagerstown, Md.  
Phoenix Iron Works Co., Meadville, Pa.  
Schofield Iron Works, Macon, Ga.  
Southern Engine & Boiler Works, Jackson, Tenn.  
Valk & Murdoch Iron Works, Charleston, S. C.  
Vogt Machine Co., Henry, Louisville, Ky.  
Walsh & Weldner Boiler Co., Chattanooga, Tenn.  
Zelicker Supply Co., Walter A., St. Louis, Mo.
- Boiler Covering.**  
Cheapeake Roofing & Pipe Covering Co., Baltimore, Md.
- Boiler Graphite.**  
Dixon Crucible Co., Joseph, Jersey City, N. J.
- Boiler Tubes. [See Tubes, Boiler.]**
- Bolts, Nuts, Rivets, Studs and Washers.**  
Progressive Mfg. Co., Torrington, Conn.  
Republic Iron & Steel Co., Youngstown, O.  
Upson Nut Co., The, Cleveland, O.
- Bonds. (Surety, etc.)**  
Fidelity & Deposit Co. of Balto., Baltimore, Md.
- Bottling Outfits.**  
Vilter Mfg. Co., Milwaukee, Wis.
- Brass Goods.**  
Bailey-Leiby Co., Charleston, S. C.  
Buckeye Iron & Brass Works, Dayton, O.  
Lunkenheimer Co., The, Cincinnati, Ohio.  
Powell Co., Wm., Cincinnati, O.
- Brass Railing and Grilles.**  
Newman Mfg. Co., Cincinnati, Ohio.
- Brewers' Machinery.**  
Vilter Mfg. Co., Milwaukee, Wis.
- Brick. (Acid.)**  
Hood Brick Co., B. Miffin, Atlanta, Ga.
- Brick. (Building.)**  
Am. Enamelled Brick & Tile Co., New York, N. Y.  
Hood Brick Co., B. Miffin, Atlanta, Ga.  
Hydraulic Press Brick Co., St. Louis, Mo.  
Kingsport Brick Corp., Johnson City, Tenn.  
Scott Brick Co., Alex. A., Knoxville, Tenn.  
Southern Face Brick Exchange, Birmingham, Ala.  
Standard Brick Co., Macon, Ga.
- Brick. (Enamelled.)**  
Am. Enamelled Brick & Tile Co., New York, N. Y.
- Brick. (Fire.)**  
Killian Fireproofing & Brick Works, Killian, S. O.  
Louisville Fire Brick Works, Highland Park, Ky.  
Mexico Brick & Fire Clay Co., Mexico, Mo.  
Pomona Terra-Cotta Co., Pomona, N. C.  
Standard Brick Co., Macon, Ga.  
Stevens' Sons Co., H., Macon, Ga.  
Union Mining Co., Mt. Savage, Md.
- Brick. (Paving.)**  
Carlyle Paving Brick Co., Portsmouth, R. I.  
Copeland-Ingalls Shale Brick Co., Birmingham, Ala.  
Dunn Wire-Out-Lug Brick Co., Connaught, Ohio.  
Southern Clay Mfg. Co., Chattanooga, Tenn.  
Standard Brick Co., Macon, Ga.
- Brick and Clayworking Machinery and Supplies.**  
Chase Fdry. & Mfg. Co., Columbus, O.  
Fernholtz Brick Machinery Co., St. Louis, Mo.  
Freese & Co., E. M., Galton, O.  
Steele & Sons, J. C., Statesville, N. C.
- Bridges. (Concrete.)**  
Cunningham Construction Co., Shreveport, La.  
Luten, Daniel B., Indianapolis, Ind.  
Requarth Co., O. W., Charlotte, N. C.  
Turner, C. A. P., Minneapolis, Minn.
- Bridges. (Rolling Lift.)**  
Scherzer Rolling Lift Bridge Co., Chicago, Ill.
- Bridges. (Steel.)**  
American Bridge Co., of New York, N. Y.  
Belmont Iron Works, Philadelphia, Pa.  
Case Crane & Engineering Co., Columbus, Ohio.  
Champion Bridge Co., Wilmington, Ohio.  
Chicago Bridge & Iron Works, Chicago, Ill.  
Cunningham Construction Co., Shreveport, La.  
East St. Louis Bridge Co., East St. Louis, Ill.  
Loregonia Bridge Co., Lebanon, Ohio.  
Richmond Structural Steel Co., Richmond, Va.  
Scherzer Rolling Lift Bridge Co., Chicago, Ill.  
Vincennes Bridge Co., Vincennes, Ind.  
Virginia Bridge & Iron Co., Roanoke, Va.
- Bridge and Structural Iron Paints.**  
Chattanooga Paint Co., Chattanooga, Tenn.
- Bridge Builders. (Timber.)**  
Murray & Co., Inc., W. D., Norfolk, Va.
- Brimstone.**  
Union Sulphur Co., New York, N. Y.
- Buckets. (Clam Shell.)**  
Hayward Company, New York, N. Y.  
Williams Company, G. H., Cleveland, Ohio.
- Buckets. (Orange Peel.)**  
Hayward Co., The, New York, N. Y.
- Buckets. (Dredging, Excavating, Sewer, etc.)**  
Hayward Co., New York, N. Y.  
Monaghan Mch. Co., Chicago, Ill.  
Williams Co., The G. H., Cleveland, O.
- Buckets. (Grab.)**  
Hunt Co., Inc., C. W., West New Brighton, N. Y.
- Buckets. (Ore Handling.)**  
Caldwell & Son Co., H. W., Chicago, Ill.  
Hayward Co., New York, N. Y.  
Link-Belt Co., Nicotown (Philadelphia), Pa.  
Williams Co., The G. H., Cleveland, O.
- Buhr Stones.**  
Starr Co., B. F., Baltimore, Md.
- Builders and Contractors.**  
Interstate Const. Co., Louisville, Ky.  
Stone & Webster Eng. Corp., Boston, Mass.  
Turner, C. A. P., Minneapolis, Minn.  
White Companies, J. G., New York, N. Y.
- Building Stone**  
Atlantic Stone Co., Atlanta, Ga.  
Bedford Steam Stone Works, Bedford, Ind.
- Building Supplies.**  
Harris Bros. Co., Chicago, Ill.  
Southern Building Material Co., Norfolk, Va.
- Burners. (Oil.) [See Fuel Oil Equipments.]**
- Bushings. (Oilless, for Loose Pulleys.)**  
Metalline Co., Long Island City, N. Y.
- Cables.**  
Broderick & Bascom Rope Co., St. Louis, Mo.  
Roebbing's Sons Co., John A., Trenton, N. J.
- Cables. (Underground.)**  
Safety Insulated Wire & Cable Co., New York, N. Y.
- Cables and Wires. (Insulated.)**  
American Steel & Wire Co., Chicago, Ill.  
Safety Insulated Wire & Cable Co., New York, N. Y.
- Cableways. (Overhead Suspension.)**  
Amburns Co. (Tramway Department), New York, N. Y.  
Broderick & Bascom Rope Co., St. Louis, Mo.  
Flory Mfg. Co., S., Bangor, Pa.  
Lidgerwood Mfg. Co., New York, N. Y.  
Roebbing's Sons Co., John A., Trenton, N. J.
- Can and Box Making Machinery. (Tin.)**  
Bliss Co., E. W., Brooklyn, N. Y.  
Max Amis Machine Co., Mt. Vernon, N. Y.
- Canning Machinery and Supplies.**  
Robins & Co., A. K., Baltimore, Md.  
Sprague Canning Machinery Co., Chicago, Ill.
- Carborundum Paper and Cloth.**  
Carborundum Co., Niagara Falls, N. Y.
- Cars. (Dump, Industrial, Logging and Mine.)**  
Austin Mfg. Co., Chicago, Ill.  
Chase Fdry. & Mfg. Co., Columbus, O.  
Curd, Geo. B., Cincinnati, Ohio.  
Electric Wheel Co., Quincy, Ill.  
Georgia Car & Locomotive Co., Atlanta, Ga.  
Hunt Co., C. W., Inc., West New Brighton, N. Y.  
Oliver Mfg. Co., Wm. J., Knoxville, Tenn.  
Western Wheeled Scraper Co., Aurora, Ill.
- Cars. (Passenger and Freight.) [See Railroad Equipment and Supplies.]**
- Car Wheels, Axles and Trucks.**  
Oliver Mfg. Co., Wm. J., Knoxville, Tenn.
- Cast Iron Pipe. (See Pipe.) [Cast Iron.]**
- Castings. (Aluminum.)**  
Aluminum Company of America, Pittsburgh, Pa.
- Castings. (Brass and Bronze.)**  
McKenna Bros. Brass Co., Pittsburgh, Pa.  
Triumph Electric Co., Cincinnati, O.
- Castings. (Gray Iron.)**  
Columbian Iron Works, Chattanooga, Tenn.  
Georgia Car & Locomotive Co., Atlanta, Ga.  
Glennan Pipe & Foundry Co., Lynchburg, Va.  
Hull's Sons, D. F., Hagerstown, Md.  
Lynchburg Foundry Co., Lynchburg, Va.  
Phoenix Iron Works Co., Meadville, Pa.  
U. S. Cast Iron Pipe & Fdry. Co., Burlington, N. J.  
Valk & Murdoch Iron Works, Charleston, S. C.  
Westbrook Elevator Co., Danville, Va.
- Castings. (Malleable Iron and Steel.)**  
Columbus Malleable Iron Co., Columbus, Ohio.  
General Malleable Co., Warren, O.  
Marion Malleable Iron Works, The, Marion, Ind.  
Missouri Malleable Iron Co., East St. Louis, Ill.
- Castings. (Steel.)**  
Oracble Steel Castings Co., Lansdowne, Pa.  
Hoffman & Co., Inc., R. O., Baltimore, Md.  
Phoenix Iron Works Co., Meadville, Pa.  
Riverside Steel Casting Co., Newark, N. J.
- Ceillings (Metal.)**  
Edwards Manufacturing Co., Cincinnati, O.  
Keighly Metal Ceil. & Mfg. Co., S., Pittsburgh, Pa.
- Cement.**  
Cincinnati Portland Cem. Corp., Kingsport, Tenn.  
Dixie Portland Cement Co., Chattanooga, Tenn.  
Hartman Cement Co., Wm. G., Philadelphia, Pa.  
Kirkpatrick Sand & Cement Co., Birmingham, Ala.  
Kosmos Portland Cement Co., Inc., Louisville, Ky.  
Lehigh Portland Cement Co., Allentown, Pa.  
Southern States Portland Cem. Co., Rockmart, Ga.  
Standard Portland Cement Co., Leeds, Ala.
- Cement Machinery.**  
Allis-Chalmers Mfg. Co., Milwaukee, Wis.  
Aising Engineering Co., J. R., New York, N. Y.  
Power & Mining Machinery Co., Oudahy, Wis.  
Raymond Bros. Impact Pulv. Co., Chicago, Ill.
- Chains. (Dredge, Quarry, Steam Shovel.)**  
Weimer Chain & Iron Co., Lebanon, Pa.
- Chemists. (Analytical and Consulting.)**  
Davis, Geo. C., Philadelphia, Pa.  
Froehling & Robertson, Richmond, Va.  
Hunt & Co., Robt. W., Chicago, Ill.  
Little Inc., A. D., Boston, Mass.  
Pittsburgh Testing Laboratory, Pittsburgh, Pa.  
Wiley & Co., Baltimore, Md.
- Chloride Accumulator.**  
Electric Storage Battery Co., The, Philadelphia, Pa.
- Chucks.**  
Morse Twist Drill & Mch. Co., New Bedford, Mass.
- Cities and Towns. (Commercial and Industrial Opportunities.) [See Industrial, Agricultural and Commercial Opportunities.]**
- Clamps. (For Concrete Forms.)**  
Sterling Wheelbarrow Co., Milwaukee, Wis.
- Clayworking Machinery. [See Brick and Clayworking Mch. and Supplies.]**
- Cleansing Compound. (Floors, Etc.)**  
India Alkali Works, Boston, Mass.
- Clocks. (Watchman.)**  
Watchman's Clock & Supply Co., New York, N. Y.
- Clutches. (Friction.)**  
Affiliated Manufacturers Co., Milwaukee, Wis.  
Medart Patent Pulley Co., St. Louis, Mo.  
Moore & White Co., The, Philadelphia, Pa.
- Coal.**  
Cincinnati Coal Corp., Dante, Va.  
Cincinnati Fuel Co., Spartanburg, S. C.  
Consolidation Coal Co., Inc., New York, N. Y.  
Tennessee Coal, Iron & R. R. Co., B'm'gh'm, Ala.
- Coal Cutters.**  
Jeffery Mfg. Co., Columbus, O.
- Coal Handling Machinery.**  
Bartlett & Snow Co., C. O., Cleveland, O.  
Guarantee Construction Co., New York, N. Y.  
Hayward Co., New York, N. Y.  
Hunt Co., C. W., Inc., West New Brighton, N. Y.  
Jeffery Mfg. Co., Columbus, O.  
Link-Belt Co., Nicotown (Philadelphia), Pa.  
Weimer Mfg. Co., Chicago, Ill.
- Coal Tar and By-Products.**  
Jeffery Mfg. Co., Philadelphia, Pa.
- Coal Tipples.**  
American Bridge Co. of New York, N. Y.
- Coke.**  
Tennessee Coal, Iron & R. R. Co., B'm'gh'm, Ala.
- Cold Store Doors.**  
Brecht Co., The, St. Louis, Mo.
- Colleges and Schools.**  
Rensselaer Polytechnic Institute, Troy, N. Y.
- Colleges. (Technical.)**  
Rensselaer Polytechnic Institute, Troy, N. Y.
- Columns. (Porch, Interior, Pergola.)**  
Nickerson Mfg. Co., Knoxville, Tenn.
- Commission Merchants. (Export & Import.)**  
Duckett & Co., Inc., A. W., New York, N. Y.
- Concrete Construction. (Reinforced.)**  
Harry-Fortune Construction Co., Easton, Ga.  
Corrugated Bar Co., Buffalo, N. Y.  
Cunningham Construction Co., Shreveport, La.  
Foster-Orington-Gould Co., Nashville, Tenn.  
Guarantee Construction Co., New York, N. Y.  
Jeffery Mfg. Co., Columbus, O.  
Requarth Co., O. W., Charlotte, N. C.  
Turner, C. A. P., Minneapolis, Minn.
- Concrete Curb Protector. (Steel.)**  
Steel Protected Concrete Co., Philadelphia, Pa.
- Concrete Mixers. [See Mixers. (Concrete)]**
- Concrete Reinforcing Bars.**  
Carnegie Steel Co., Pittsburgh, Pa.  
Corrugated Bar Co., Buffalo, N. Y.  
Gulf States Steel Co., Birmingham, Ala.  
Hoffman & Co., R. O., Baltimore, Md.  
Jones & Laughlin Steel Co., Pittsburgh, Pa.  
Lackawanna Steel Co., Lackawanna, N. Y.  
Laclede Steel Co., St. Louis, Mo.  
Pardee Works, Co., Perth Amboy, N. J.  
Republic Iron & Steel Co., Youngstown, O.  
Sweets Steel Co., Williamsport, Pa.
- Concrete Reinforcing Bar Couplings.**  
Marion Malleable Iron Works, Marion, Ind.
- Concrete Reinforcing Wire and Wire Fabric.**  
American Steel & Wire Co., Chicago, Ill.  
Roebbing's Sons Co., John A., Trenton, N. J.
- Condensers.**  
Albergo Pump & Condenser Co., New York, N. Y.  
Allis-Chalmers Mfg. Co., Milwaukee, Wis.  
Oresson-Morris Co., Philadelphia, Pa.  
Dean Bros., Steam Pump Wks., Indianapolis, Ind.  
Westinghouse Machine Co., Pittsburgh, Pa.  
York Mfg. Co., York, Pa.
- Conductor Pipe.**  
Edwards Mfg. Co., Cincinnati, O.
- Conduits. (Electrical.)**  
National Metal Molding Co., Pittsburgh, Pa.
- Conduits. (Interior)**  
National Metal Molding Co., Pittsburgh, Pa.
- Conduits. (Steel.)**  
National Metal Molding Co., Pittsburgh, Pa.
- Conduit Fittings.**  
National Metal Molding Co., Pittsburgh, Pa.
- Contractors. (Concrete.)**  
Harry-Fortune Construction Co., Easton, Ga.
- Contractors. (Drainage.)**  
Globe Dredging Co., Savannah, Ga.  
Thompson & Mosley, Greensboro, N. C.
- Contractors. (Dredging.)**  
Globe Dredging Co., Savannah, Ga.
- Contractors. (Hydro-Electric Development.)**  
Requarth Co., O. W., Charlotte, N. C.



**Contractors. (Water Supply.)**

Layne &amp; Bowler Co., Houston, Tex.

**Contractor's Machinery and Supplies. [See also Hoisting Machinery.]**

American Clay Machinery Co., The, Bucyrus, Ohio.  
Austin Mfg. Co., Chicago, Ill.  
Beyer Mach. Co., The John F., Ravenna, O.  
Cord. Geo. B., Cincinnati, O.  
Flory Mfg. Co., S. Bangor, Pa.  
Hyde Bros. Steel & Rail Co., Pittsburgh, Pa.  
Marine Metal & Supply Co., New York, N. Y.  
Milburn Co., Alex. N., Baltimore, Md.  
Monaghan Mch. Co., Chicago, Ill.  
National Hoisting Engine Co., Harrison, N. J.  
Oliver Mfg. Co., Wm. J., Knoxville, Tenn.  
Sherwood, E. G., New York, N. Y.  
Sterling Machinery Co., New York, N. Y.  
Thaw & Williams, Cincinnati, O.

**Conveying and Elevating Machinery.**

Ambrose Co., (Tramway Department), New York, N. Y.  
Bartlett & Snow Co., C. O., Cleveland, O.  
Caldwell & Son Co., H. W., Chicago, Ill.  
Flory Mfg. Co., S. Bangor, Pa.  
Guarantee Construction Co., New York, N. Y.  
Hunt Co., C. W., Inc., West New Brighton, N. Y.  
Jeffrey Mfg. Co., Columbus, O.  
Lidgerwood Mfg. Co., New York, N. Y.  
Link-Belt Co., Nicetown, (Philadelphia) Pa.  
Mathews Gravity Carrier Co., Ellwood City, Pa.  
McLanahan-Stone Mach. Co., Hollidaysburg, Pa.  
Weiler Mfg. Co., Chicago, Ill.

**Cooperage Stock and Box Shook Machinery.**

Gerlich Co., Peter, Cleveland, O.

**Coppersmith.**

McMillan Bros., Jacksonville, Fla.

**Cordage.**

Broderick & Bascom Rope Co., St. Louis, Mo.  
Columbian Rope Co., Auburn, N. Y.  
Waterbury Co., New York, N. Y.

**Corn-Mill Machinery.**

Raymond Bros. Impact Pulv. Co., Chicago, Ill.  
Starr Co., B. F., Baltimore, Md.  
Wolf Co., Chambersburg, Pa.

**Cotton Oil and Products.**

American Cotton Oil Co., New York, N. Y.

**Cotton Yarns. (Commission Merchants.)**

Paulson, Linkroom &amp; Co., New York, N. Y.

**Cotton-Gin Machinery.**

Carver Cotton Gin Co., East Bridgewater, Mass.  
Continental Gin Co., Birmingham, Ala.  
Gibbs Machinery Co., Inc., Columbia, S. C.  
Murray Co., The, Atlanta, Ga.

**Cotton-Mill Machinery.**

Draper Co., Hopedale, Mass.  
Mason Machine Works., Taunton, Mass.  
Saco-Lowell Shop, Boston, Mass.  
Whitinsville Spin'g Ring Co., Whitinsville, Mass.

**Cotton-Mill Supplies.**

American Supply Co., Providence, R. I.  
Whitinsville Spin'g Ring Co., Whitinsville, Mass.

**Cottonseed-Oil Machinery.**

Buckeye Iron & Brass Works, Dayton, O.  
Burruss Engineering Co., Atlanta, Ga.  
Cardwell Machine Co., Richmond, Va.  
Carver Cotton Gin Co., East Bridgewater, Mass.  
Continental Gin Co., Birmingham, Ala.  
French Oil Mill Machinery Co., Fiqua, O.  
Murray Co., The, Atlanta, Ga.  
Raymond Bros. Impact Pulv. Co., Chicago, Ill.

**Couplings.**

American Spiral Pipe Works, Chicago, Ill.  
Golden's Foundry & Machine Co., Columbus, Ga.  
Wood's Sons Co., T. B., Chambersburg, Pa.

**Couplings. (Car.)**

Weimer Chain &amp; Iron Co., Lebanon, Pa.

**Couplings. (Hose, Air, Gas, Steam and Water.)**

National Tube Co., Pittsburgh, Pa.

**Coverings. (Pipe, Boiler, etc.)**

John-Manville Co., H. W., New York, N. Y.  
Southern Asbestos Mfg. Co., Inc., Richmond, Va.

**Cranes. (Locomotive.)**

Ohio Locomotive Crane Co., Bucyrus, O.

**Cranes. (Traveling, Hand, Power, Hydraulic.)**

Case Crane & Engineering Co., Columbus, Ohio.  
Lane Mfg. Co., Montpelier, Vt.  
Speidel, J. G., Reading, Pa.

**Crayons.**

Georgia Talc Co., Asheville, N. C.  
Lowell Orayon Co., Lowell, Mass.

**Crosscutting Equipment.**

Casey-Hedges Co., Chattanooga, Tenn.  
Struthers-Wells Co., Warren, Pa.  
Walsh & Weller Boiler Co., Chattanooga, Tenn.

**Crosscutting Works.**

American Crosscut Works, New Orleans, La.  
Internat'l Crosscut & Cons. Co., Galveston, Tex.  
National Lumber & Crosscut Co., Texarkana, Ark.  
Southern Crosscutting Co., Ltd., Slidell, La.  
Southern Wood Preserving Co., Atlanta, Ga.

**Crossarms and Pins.**

Western Electric Co., New York, N. Y.

**Crossarms. (Crossed.)**

American Crosscut Wks., New Orleans, La.  
Internat'l Crosscutting & Cons. Co., Galveston, Tex.  
National Lumber & Crosscut Co., Texarkana, Ark.  
Southern Crosscutting Co., Ltd., Slidell, La.  
Southern Wood Preserving Co., Atlanta, Ga.

**Crossings. [See Railroad Frogs and Switches.]****Crosscut Machine.**

Standard Portable Saw Mill Co., New Orleans, La.

**Crosscut. (Crossed.)**

American Crosscut Works, New Orleans, La.  
Internat'l Crosscut & Cons. Co., Galveston, Tex.  
National Lumber & Crosscut Co., Texarkana, Ark.  
Southern Crosscutting Co., Ltd., Slidell, La.  
Southern Wood Preserving Co., Atlanta, Ga.

**Crushed Stone. (Road Concrete and Ballast.)**

American Ballast Co., Knoxville, Tenn.  
Atlantic Stone Co., Atlanta, Ga.  
Bald Mountain Quarry, Newson, N. C.  
Chickamauga Quarry & Construction Co., Chattanooga, Tenn.  
Kirkpatrick Sand & Cement Co., Birmingham, Ala.  
Veston Brookley Quarry Co., Columbia, S. C.

**Crushers. (Corn and Cob.)**

Gründler Pat. Crusher & Pulv. Co., St. Louis, Mo.  
Jeffrey Mfg. Co., Columbus, O.  
Raymond Bros. Impact Pulv. Co., Chicago, Ill.

**Crushers. (Rock.)**

Austin Mfg. Co., Chicago, Ill.  
Buchanan Co., Inc., O. G., New York, N. Y.  
Chalmers & Williams, Inc., Chicago Heights, Ill.  
Power & Mining Machinery Co., Oudahy, Wis.  
Raymond Bros. Impact Pulv. Co., Chicago, Ill.  
Universal Road Mch. Co., Kingston, N. Y.  
Western Wheeled Scraper Co., Aurora, Ill.  
Wheeling Mold & Fdry. Co., Wheeling, W. Va.  
Crushing and Pulverizing Machinery.  
Allis-Chalmers Mfg. Co., Milwaukee, Wis.  
Aising Engineering Co., J. R., New York, N. Y.  
Austin Mfg. Co., Chicago, Ill.  
Bartlett & Snow Co., C. O., Cleveland, O.  
Buchanan Co., Inc., O. G., New York, N. Y.  
Chalmers & Williams, Inc., Chicago Heights, Ill.  
Gründler Pat. Crusher & Pulv. Co., St. Louis, Mo.  
Jeffrey Mfg. Co., Columbus, O.  
McLanahan-Stone Mach. Co., Hollidaysburg, Pa.  
Raymond Bros. Impact Pulv. Co., Chicago, Ill.  
Stedman's Foundry & Machine Works, Aurora, Ind.  
Western Wheeled Scraper Co., Aurora, Ill.  
Wheeling Mold & Fdry. Co., Wheeling, W. Va.

**Culvert Pipe. (Cast Iron.)**

American Cast Iron Pipe Co., Birmingham, Ala.  
Olson & Sons, James B., Chicago, Ill.  
Donaldson Iron Co., Etnaus, Pa.  
Hammorgan Pipe & Foundry Co., Lynchburg, Va.  
Lynchburg Foundry Co., Lynchburg, Va.  
Massillon Iron & Steel Co., Massillon, Ohio.  
Wood & Co., R. D., Philadelphia, Pa.

**Culverts. (Corrugated Metal.)**

American Sheet & Tin Plate Co., Pittsburgh, Pa.  
Armo Culvert & Publicity Bureau, Cincinnati, O.  
Atlas Metal Works, Dallas, Tex.  
Canton Culvert and Silo Co., The, Canton, O.  
Dixie Culvert & Metal Co., Atlanta, Ga.  
Gallon Iron Works & Mfg. Co., The, Gallon, Ohio.  
Harty Bros. Co., New Orleans, La.  
Lone Star Culvert Co., Houston, Tex.  
National Corrugated Culvert Mfg. Co., Warren, Pa.  
Newport Culvert Co., Inc., Newport, Ky.  
Salisbury Metal Culvert Co., Inc., Salisbury, N. C.  
Tennessee Metal Culvert Co., Nashville, Tenn.  
Virginia Metal & Culvert Co., Inc., Roanoke, Va.

**Culverts. (Vitrified Pipe.)**

Southern Sewer Pipe Co., Birmingham, Ala.  
Stevens Sons Co., E. M., Macon, Ga.

**Curb Protector. (Steel.)**

Steel Protected Concrete Co., Philadelphia, Pa.

**Cutter Grinders.**

Vitrified Wheel Co., Westfield, Mass.

**Cutting. (Oxy-Acetylene Process.)**

Prest-O-Lite Co., Inc., The, Indianapolis, Ind.

**Cuts. (Half Tone, Line, Etc.)**

Alpha Photo Engraving Co., Balto. Md.

**Dams. (Reinforced Concrete.)**

Herry-Fortune Construction Co., Easton, Ga.

**Derricks and Derrick Fittings.**

Byers Mach. Co., The John F., Ravenna, O.  
Hayward Co., The, New York, N. Y.  
Monaghan Machine Co., Chicago, Ill.

**Designers and Illustrators. (Printed Matter.)**

Alpha Photo Engraving Co., Baltimore, Md.

**Disposal Plants. (Garbage Incinerators.)**

Stacy-Bates Co., Minneapolis, Minn.

**Ditching Machinery.**

American Steel Dredge Co., Fort Wayne, Ind.  
Bay City Dredge Works, Bay City, Mich.  
Fairbanks Steam Shovel Co., Marion, O.  
Hayward Co., The, New York, N. Y.  
Marion Steam Shovel Co., Marion, O.  
Monaghan Machine Co., Chicago, Ill.  
Thew Automatic Shovel Co., Lorain, Ohio.  
Williams Co., The G. H., Cleveland, O.

**Doors. (Steel Rolling.)**

Kinross Mfg. Co., Columbus, O.

**Doors. (Tin Clad.)**

Victor Mfg. Co., Newburyport, Mass.

**Double Seamers.**

Max Ams Machine Co., Mt. Vernon, N. Y.

**Draftsman.**

Childrey Co., Richmond, Va.

**Draftsmen's Supplies.**

Weber &amp; Co., F., Philadelphia, Pa.

**Dredging Contractors. [See Contractors (Dredging).]****Dredge Chains.**

Weimer Chain &amp; Iron Co., Lebanon, Pa.

**Dredges. [See Excavating Machinery.]****Drills. (Hammer)**

Sullivan Machinery Co., Chicago, Ill.

**Drills. (Pneumatic) [See also Drills Rock and Mining.]****Drills. (Prospecting.)**

Keystone Steam Well Mach. Co., Beaver Falls, Pa.

**Drills. (Rock and Mining.)**

Jeffrey Mfg. Co., Columbus, O.

**Drills. (Twist.)**

McKenna Bros. Brass Co., Pittsburgh, Pa.  
Morris Twist Drill & Mch. Co., New Bedford, Mass.

**Drive Well Points and Well Supplies.**

National Tube Co., Pittsburgh, Pa.

**Drop Forgings.**

American Spiral Pipe Works, Chicago, Ill.

**Drop Forging Machinery.**

Biles Co. E. W., Brooklyn, N. Y.

**Dryers. (Sand.) [See Sand Dryers.]****Dry Docks. (Builders of)**

American Bridge Co. of New York, N. Y.

**Drying Machinery.**

American Process Co., New York, N. Y.  
Baldy-Lobby Co., The, Charleston, S. C.  
Buffalo Forge Co., Buffalo, N. Y.  
Coatesville, Boiler Works, Coatesville, Pa.  
Cummer & Son Co., F. D., The, Cleveland, Ohio  
Harvey Manufacturing Co., South Boston, Mass.  
Ruggie-Coles Engineering Co., New York, N. Y.  
Sturtevant Co., B. F., Hyde Park, Boston, Mass.

**Dry Kilns.**

Buffalo Forge Co., Buffalo, N. Y.

Moore Dry Kiln Co., L., Jacksonville, Fla.

**Dry Kiln Equipment.**

Moore Dry Kiln Co., L., Jacksonville, Fla.

**Dumbwaiters. (Hand Power.)**

King, Wm. F., Brooklyn, N. Y.

McKenna Bros. Brass Co., Pittsburgh, Pa.

Speidel, J. G., Reading, Pa.

**Dump Wagons and Wagon Boxes.**

Troy Wagon Works Co., Troy, O.

**Dust-Collecting Systems.**

Buffalo Forge Co., Buffalo, N. Y.

King Co., F. E., Norfolk, Va.

South Atlantic Blow Pipe &amp; Sheet Metal Co., Savannah, Ga.

**Dynamite. (Industrial and Agricultural.)**

Du Pont De Nemours Powder Co., E. I.

Kreusner Nat'l Powder Co., Emporium, Pa.

**Dynamos and Motors.**

Assets Purchasing Co., Wheeling, W. Va.

General Electric Co., Schenectady, N. Y.

Pan Electric Mfg. Co., St. Louis, Mo.

Terry Steam Turbine Co., Hartford, Conn.

Triumph Electric Co., Cincinnati, O.

Western Electric Co., New York, N. Y.

**Eaves. (Trough.)**

Edwards Mfg. Co., Cincinnati, O.

**Ejectors. (Sewage.)**

Lunkenheimer Co., The, Cincinnati, O.

Pacific Flush Tank Co., New York, N. Y.

**Electric Machinery. (Dynamos, Generators, Motors, etc.)**

Allis-Chalmers Manufacturing Co., Milwaukee, Wis.

American Elevator &amp; Mch. Co., Louisville, Ky.

Crockwell Electric Co., Ampere, N. J.

Engberg Electric &amp; Mechanical Works, St. Joseph, Mich.

Fairbanks-Morse &amp; Co., Atlanta, Ga.

General Electric Co., Schenectady, N. Y.

Heer Engine Co., Portsmouth, Ohio.

Lee Electric Co., Baltimore, Md.

Moore &amp; Co., Edgar M., Pittsburgh, Pa.

Pan Electric Mfg. Co., St. Louis, Mo.

Piedmont Electric Co., Asheville, N. C.

Scheider Co., R., Philadelphia, Pa.

Schroeder Electric Co., Evansville, Ind.

Sturtevant Co., B. F., Hyde Park Boston, Mass.

Triumph Electric Co., Cincinnati, O.

Wilson Mch. Co., Harold R., St. Louis, Mo.

**Electrical Contractors, Instruments and Supplies.**

Crockwell Electric Co., Ampere, N. J.

Economy Fuse &amp; Mfg. Co., Chicago, Ill.

General Electric Co., Schenectady, N. Y.

Hill &amp; Co., Walter E., Baltimore, Md.

Lee Electric Co., Baltimore, Md.

Levy-Morton Co., Columbus, Ga.

Piedmont Electric Co., Asheville, N. C.

Walker Electrical &amp; Plumbing Co., Rome, Ga.

**Electric Light Plants. (Portable.)**

Schroeder Electric Co., Evansville, Ind.

**Electro-Magnet. [See Magnet Electro.]****Elevating, Conveying and Power Transmission Machinery. [See also Conveying and Elevating Machinery and Power Transmission Mch.]****Elevator****ELECTRIC.**

American Electric Machine &amp; Elevator Co., St. Louis, Mo.

Alma Machine Co., Louisville, Ky.

Curren Elevator Co., James H., Cincinnati, Ohio.

K. C. Elevator Mfg. Co., Kansas City, Mo.

Miller Elevator Mfg. Co., Wm. A., St. Louis, Mo.

Moffatt Machinery Mfg. Co., Charlotte, N. C.

Ohio Elevator &amp; Machine Co., Columbus, O.

Otis Elevator Co., New York, N. Y.

Speidel, J. G., Reading, Pa.

Westbrook Elevator Co., Danville, Va.

**HYDRAULIC.**

American Electric Machine &amp; Elevator Co., St. Louis, Mo.

Curren Elevator Co., James H., Cincinnati, O.

K. C. Elevator Mfg. Co., Kansas City, Mo.

Moffatt Machinery Mfg. Co., Charlotte, N. C.

Ohio Elevator &amp; Machine Co., Columbus, O.

Otis Elevator Co., New York, N. Y.

Speidel, J. G., Reading, Pa.

Westbrook Elevator Co., Danville, Va.

**STEAM HYDRAULIC.**

Ridgway &amp; Son Co., The, Coatesville, Pa.

**Elevators. (Automatic.)**

Mathews Gravity Carrier Co., Ellwood City, Pa.

**Elevators. (Portable for Warehouses, etc.)**

Economy Engineering Co., Chicago, Ill.

**Elevator Bolts.**

Upon Nut Co., The, Cleveland, O.

**Elevator Buckets.**

Caldwell &amp; Son Co., H. W., Chicago, Ill.

Hendrick Mfg. Co., Carbondale, Pa.

Jeffrey Mfg. Co., Columbus, O.

Link-Belt Co., Nicetown (Philadelphia) Pa.

**Elevator Enclosures and Cabs.**

Bolles Iron &amp; Wire Works, J. E., Detroit, Mich.

Cincinnati Mfg. Co., Cincinnati, O.

Dow Wire &amp; Iron Works, Louisville, Ky.

Dufur &amp; Co., Baltimore, Md.

Meyers Mfg. Co., The Fred J., Hamilton, O.

Ohio Elevator &amp; Machine Co., The, Columbus, O.

Otis Elevator Co., New York, N. Y.

**Elevator Rope. [See Wire Rope]****Elevator Safety Gates.**

American Elec. Mch. &amp; Elevator Co., St. Louis, Mo.

Richmond Safety Gate Co., Richmond, Ind.

**Emery Wheels. [See Grinding Wheels.]****Engineers.****APPRAISAL.**

Atlantic Engineering Co., Savannah, Ga.

Day &amp; Zimmerman, Philadelphia, Pa.

Forrester Co., The H. G., Memphis, Tenn.

Weller, Francis R., Washington, D. C.

**BLAST FURNACES.**

Smythe Co., The S. R., Pittsburgh, Pa.

**BRIDGE.**

Atlantic Engineering Co., Savannah, Ga.

Greiner &amp; Whitman, Baltimore, Md.

Martin &amp; Co. A. J., Portsmouth, Ohio.

**CHEMICAL.**

Crosby, Walter W., Baltimore, Md.

Institute of Industrial Research, Washington, D. C.

Little, Inc., A. D., Boston, Mass.

Pittsburgh Testing Laboratory, Pittsburgh, Pa.

**CIVIL.**

Arnold Co., The, Chicago, Ill.

Brown &amp; Clarkson, Washington, D. C.

Bryant, Glauco A., Wilson, N. O.

## CLASSIFIED INDEX OF ADVERTISEMENTS.

## Engineers.

## MECHANICAL.

Arnold Co., The, Chicago, Ill.  
Kent, Inc., Robert Sayre, Brooklyn, N. Y.  
Kelly, Thos. C., Cincinnati, Ohio.  
Lide, Martin J., Birmingham, Ala.  
McLundie, A. S., Chattanooga, Tenn.  
Stevens, Harry, Washington, D. C.  
Tucker & Laxon, Charlotte, N. C.

## MINING.

Brown & Clarkson, Washington, D. C.  
Grimsley, G. P., Martinsburg, W. Va.  
Hogue Engineering Ass'n, Charleston, W. Va.  
Jones, E. M., Chattanooga, Tenn.  
Renshaw & Breese, Huntington, W. Va.

## MUNICIPAL.

Anderson & Christie, Charlotte, N. C.  
Brown & Clarkson, Washington, D. C.  
Crosby, Walter W., Baltimore, Md.  
Dabney Engineering Co., Memphis, Tenn.  
Elrod, Henry E., Dallas, Texas.  
Graves Engineering Co., Inc., New York, N. Y.  
Greiner & Whitman, Baltimore, Md.  
Havely, H. B., Monroe, N. C.  
Hogue Engineering Ass'n, Charleston, W. Va.  
Knowles, Morris, Pittsburgh, Pa.  
McCrady Bros. & Cheves, Inc., Charleston, S. C.  
McCrady Co., J. B., Atlanta, Ga.  
Paw, Arthur, Atlanta, Ga.  
Shand Engineering Corp., Columbia, S. C.  
Walker Engineering Corp., Tampa, Fla.  
White, Gilbert O., Charlotte, N. C.

## PAVING AND ROAD.

Anderson & Christie, Charlotte, N. C.  
Atlantic Engineering Co., Savannah, Ga.  
Bryant, Glaucaus A., Wilson, N. C.  
Crosby, Walter W., Baltimore, Md.  
Elrod, Henry E., Dallas, Texas.  
Havely, H. B., Monroe, N. C.  
Institute of Industrial Research, Washington, D. C.  
McCrady Bros. & Cheves, Inc., Charleston, S. C.  
Shand Engineering Corp., Columbia, S. C.  
White, Gilbert O., Charlotte, N. C.

## PUBLIC SERVICE PROPERTIES.

Day & Zimmerman, Philadelphia, Pa.  
Ferree Co., The, H. G., Memphis, Tenn.  
Ford, Bacon & Davis, New York, N. Y.  
Gillman, Harry L., Boston, Mass.  
Graves Engineering Co., Inc., New York, N. Y.  
Scotch Engineering Co., Philadelphia, Pa.  
Stone & Webster Eng'g Corp., Boston, Mass.  
Weller, Francis R., Washington, D. C.  
White Companies, J. G., New York, N. Y.

## REINFORCED CONCRETE. (Bridges, Buildings, etc.)

Cunningham Construction Co., Shreveport, La.  
Foster-Creighton-Gould Co., Nashville, Tenn.  
Guarantee Construction Co., New York, N. Y.  
Interstate Const. Co., Louisville, Ky.  
Luten, Daniel B., Indianapolis, Ind.  
Martin & Co., A. J., Portsmouth, Ohio.  
Potter, Alexander, New York, N. Y.  
Requarth Co., C. V., Washington, D. C.  
Savannah Eng'g & Construction Co., Savannah, Ga.  
Spiker, William C., Atlanta, Ga.  
Tucker & Laxon, Charlotte, N. C.  
White Companies, J. G., New York, N. Y.

## RIVER AND HARBOR.

Gillman, Harry L., Boston, Mass.

## SEWERAGE AND WATER-WORKS.

Anderson & Christie, Charlotte, N. C.  
Baylis, John R., Birmingham, Ala.  
Brown & Clarkson, Washington, D. C.  
Bryant, Glaucaus A., Wilson, N. C.  
Dabney Engineering Co., Memphis, Tenn.  
Ford, Bacon & Davis, New York, N. Y.  
Graves Engineering Co., Inc., New York, N. Y.  
Greiner & Whitman, Baltimore, Md.  
Havely, H. B., Monroe, N. C.  
Hill, Nicholas S., Jr., and S. F. Ferguson, New York, N. Y.  
Knowles, Morris, Pittsburgh, Pa.  
Mayer, J. H., Birmingham, Ala.  
Miller, Hiram Allen, Boston, Mass.  
Myers, E. W., Greensboro, N. C.  
Paw, Arthur, Atlanta, Ga.  
Potter, Alexander, New York, N. Y.  
Quick, Alfred M., Baltimore, Md.  
Stevens, Harry, Washington, D. C.  
Walker Engineering Corp., Tampa, Fla.  
White Companies, J. G., New York, N. Y.  
White Gilbert O., Charlotte, N. C.

## STEEL WORK AND ROLLING MILLS.

Smythe Co., The, S. R., Pittsburgh, Pa.

## STRUCTURAL STEEL.

Foster-Creighton-Gould Co., Nashville, Tenn.  
Shearer, O. E., Memphis, Tenn.  
Spiker, Wm. C., Atlanta, Ga.  
Renshaw & Breese, Huntington, W. Va.

## THEATRE CONSTRUCTION.

Gatlin, W. R., Hopkinsville, Ky.

## Engines.

## COMPRESSED AIR.

Dake Engine Co., Grand Haven, Mich.

## GAS AND GASOLINE.

Affiliated Manufacturers Co., Milwaukee, Wis.  
Allie-Chalmers Manufacturing Co., Milwaukee, Wis.  
Cooper Co., O. & G., Mt. Vernon, Ohio.  
De La Vergne Machine Co., New York, N. Y.  
Gas Engineering Co., Trenton, N. J.  
Gas Machinery Co., Inc., Columbia, S. C.  
Heer Engine Co., Portsmouth, Ohio.  
Mietz, A., New York, N. Y.  
Portsmouth Engine Co., Portsmouth, O.  
Power Mfg. Co., Lima, Ohio.  
Southern Engine & Boiler Works, Jackson, Tenn.  
Van Dusen, Roy, Co., The, Columbus, O.  
Westinghouse Machine Co., The, Pittsburgh, Pa.

## OIL.

Bolinders Co., New York, N. Y.  
Chicago Pneumatic Tool Co., Chicago, Ill.  
De La Vergne Machine Co., New York, N. Y.  
Fairbanks-Morse & Co., Atlanta, Ga.  
Heer Engine Co., Portsmouth, Ohio.  
Mietz, A., New York, N. Y.  
Power Mfg. Co., Lima, Ohio.  
Snow Steam Pump Works, The, New York, N. Y.

## STEAM.

Allie-Chalmers Manufacturing Co., Milwaukee, Wis.  
Ball Engine Co., Erie, Pa.  
Buffalo Forge Co., Buffalo, N. Y.  
Cameron & Barkley Co., Charleston, S. C.  
Cooper Co., O. & G., Mt. Vernon, Ohio.  
Dake Engine Co., Grand Haven, Mich.  
Engberg Electric & Mechanical Works, St. Joseph, Mich.  
Gibbs Machinery Co., Inc., Columbus, S. C.  
Griffith & Wedge Co., The, Zanesville, O.  
Harris Bros. Co., Chicago, Ill.  
Houston, Stanwood & Gamble Co., Cincinnati, O.  
Jeffery-Griner Machinery Co., Philadelphia, Pa.  
Laffel & Co., James, Springfield, O.  
Lombard Iron Works, Augusta, Ga.  
Mecklenburg Iron Works, Charlotte, N. C.  
Murray Iron Works Co., Burlington, Ia.  
Phoenix Iron Works Co., Meadville, Pa.  
Schofield Iron Works, Marion, Ga.  
Sturtevant Co., B. F., Hyde Park, Boston, Mass.  
Vilter Mfg. Co., Milwaukee, Wis.  
Westinghouse Machine Co., Pittsburgh, Pa.

Envelopes.  
Young & Selden Co., Baltimore, Md.

## Excavating Machinery.

American Clay Machinery Co., The, Bucyrus, Ohio.  
American Steel Dredge Co., Fort Wayne, Ind.  
Bay City Dredge Works, Bay City, Mich.  
Byers Mach. Co., The, John F., Ravenna, O.  
Fairbanks Steam Shovel Co., Marion, O.  
Hayward Co., New York, N. Y.  
Jeffrey Mfg. Co., Columbus, O.  
Keystone Drill & Equipment Co., Beaver Falls, Pa.  
Lidgerwood Mfg. Co., New York, N. Y.  
Marion Steam Shovel Co., Marion, O.  
Monaghan Machine Co., Chicago, Ill.  
Morris Machine Works, Baldwinville, N. Y.  
National Hoisting Engine Co., Harrison, N. J.  
The Automatic Shovel Co., Lorain, Ohio.  
Williams Co., The, G. H., Cleveland, O.

## Excavators. (Trench.)

Bay City Dredge Works, Bay City, Mich.  
Fairbanks Steam Shovel Co., Marion, O.  
Hayward Co., The, New York, N. Y.  
Monaghan Machine Co., Chicago, Ill.

## Excelsior Machinery.

Kline, Lewis T., Alpena, Mich.

## Exhaust Heads.

American Spiral Pipe Works, Chicago, Ill.

Exhibits. (Machinery Builders' Equipment and Supplies.)  
Builders' Exchange, Baltimore, Md.

## Expansion Joints.

Badger & Sons Co., E. B., Boston, Mass.

## Expansion Joints. (Street and Road.)

Philip Carey Co., The, Cincinnati, Ohio.

## Expanded Metal. (See Lath.)

## Explosives.

Du Pont De Nemours Powder Co., E. I., Wilmington, Del.  
Keystone Nat'l. Powder Co., Emporium, Pa.

## Export Agents. (South America.)

Lutz, Frieder W., Richmond, Va.

## Factory Sites. (Town and Railroad.) [See Industrial, Agricultural and Commercial Opportunities.]

## Fans. (Electric.)

General Electric Co., Schenectady, N. Y.

## Fans. (Ventilating.) [See Blowers, Exhaust Fans.]

## Fastener Driving Machine. (Corrugated Joint.)

Saracac Machine Co., Benton Harbor, Mich.

## Feed-Water Heaters and Purifiers.

American Water Softener Co., Philadelphia, Pa.  
Blake & Knowles Steam Pump Works, East Cambridge, Mass.  
Murray Iron Works Co., Burlington, Ia.  
National Pipe Bending Co., New Haven, Conn.  
Scafe & Sons Co., Wm. B., Pittsburgh, Pa.  
Stewart Heater Co., Buffalo, N. Y.

## Feed-Water Heater and Purifier and Oil Separator Combined.

Blake & Knowles Steam Pump Works, East Cambridge, Mass.

## Felt. (Building, Sheathing.)

Harrett Mfg. Co., Philadelphia, Pa.

## Fencing. (Woven Wire Field.)

American Steel & Wire Co., Chicago, Ill.  
Cyclone Fence Co., Waukegan, Ill.  
Gulf States Steel Co., Birmingham, Ala.

## Fencing, Entrance Gates. (Iron, Steel, Wire.)

American Steel & Wire Co., Chicago, Ill.  
Bolles Iron & Wire Works, J. E., Detroit, Mich.  
Cyclone Fence Co., Waukegan, Ill.  
Dow Wire & Iron Works, Louisville, Ky.  
Dufur & Co., Baltimore, Md.  
Eureka Supply Co., Chattanooga, Tenn.  
New Jersey Wire Cloth Co., Trenton, N. J.  
Ohio Elevator & Mach. Co., The, Columbus, O.

## Fertilizer Machy. [See also Phosphate Machy.]

Stedman's Foundry & Machine Works, Aurora, Ind.  
Vaik & Murdoch Iron Works, Charleston, S. C.

## Files.

Barnett Co., G. & H., Philadelphia, Pa.

Nicholson File Co., Providence, R. I.

## Filters. (Water, for Domestic and Industrial Purposes.)

American Water Softener Co., Philadelphia, Pa.  
International Filter Co., Chicago, Ill.  
New York Con. Jewell Fil. Co., New York, N. Y.

## Fire Clay. [See Brick, Fire.]

## Fire Door Fixtures.

Richmond Safety Gate Co., Richmond, Ind.

Victor Mfg. Co., Newburyport, Mass.

## Fire Extinguishers.

Badger & Sons Co., E. B., Boston, Mass.

## Fire Escapes.

Bolles Iron & Wire Works, J. E., Detroit, Mich.  
Chesapeake Iron Works, Baltimore, Md.  
Eureka Supply Co., Chattanooga, Tenn.

## Fire Hose.

Eureka Fire Hose Mfg. Co., New York, N. Y.

## Fire Places. (Brick and Tile.)

Hood Brick Co., B. Midlin, Atlanta, Ga.

## Fireproof Building Construction. [See Concrete Construction.]

## Fireproof Building Material.

Hannon Pipe Co., F., Louisville, Ky.

John-Manville Co., H. W., New York, N. Y.

## Fireproof Doors and Shutters.

Kinnear Mfg. Co., Columbus, O.  
Richmond Safety Gate Co., Richmond, Ind.  
Victor Mfg. Co., Newburyport, Pa.  
Wagner's Sons Co., J. F., Louisville, Ky.

## Fireproof Windows. [See Window Frames and Sashes (Fireproof).]

## Fittings. (Wire Rope.)

Waterbury Co., New York, N. Y.

## Fireproofing. (Brick and Tile.)

Hood Brick Co., B. Midlin, Atlanta, Ga.

## Fixtures. (Electric Lighting.)

Hill & Co., Walter E., Baltimore, Md.

## Flanges. (Iron and Steel.)

American Cast Iron Pipe Co., Birmingham, Ala.  
American Pipe & Construction Co., Phila., Pa.  
American Spiral Pipe Works, Chicago, Ill.  
Bart Mfg. Co., E. M., Providence, R. I.  
Glamorgan Pipe & Foundry Co., Lynchburg, Va.  
National Tube Co., Pittsburgh, Pa.  
U. S. Cast Iron Pipe & Fdry. Co., Burlington, N. J.  
Wood & Co., R. D., Philadelphia, Pa.

## Flare Lamps.

Prest-O-Lite Co., Inc., The, Indianapolis, Ind.

## Flexible Joints.

Moran Flex. Steam Joint Co., Inc., Louisville, Ky.

## Flooring. (Crescent Block.)

Republic Cresosoting Co., Indianapolis, Ind.

## Flooring. (Hardwood, Maple, Oak.)

Whiting, William S., Asheville, N. C.

## Flour and Grist Mill Machinery and Supplies.

Caldwell & Sons Co., H. W., Chicago, Ill.  
Salem Foundry & Machine Works, Salem, Va.  
Starr Co., B. F., Baltimore, Md.  
Wolf Co., Chambersburg, Pa.

## Flue Lining.

Owensboro Sewer Pipe Co., Owensboro, Ky.

Southern Sewer Pipe Co., Birmingham, Ala.

## Forges.

Buffalo Forge Co., Buffalo, N. Y.

## Forgings.

Weimer Chain & Iron Co., Lebanon, Pa.

## Foundations. (Waterproof.)

Requarth Co., O. W., Charlotte, N. C.

## Foundry Equipment and Supplies.

Newport Sand Bank Co., Inc., Newport, Ky.

## Foundry Facings. (Talc and Soapstones.)

Georgia Talc Co., Asheville, N. C.

## Foundry and Machine Shops.

Glamorgan Pipe & Foundry Co., Lynchburg, Va.

Golden Foundry & Machine Wks., Columbus, Ga.

Granger & Co., Louisville, Ky.

Lombard Iron Works, Augusta, Ga.

Titus, E. E., Petersburg, Va.

Vaik & Murdoch Iron Works, Charleston, S. C.

## Frogs. [See Railroad Frogs and Switches.]

## Fuel Economizer.

Green Fuel Economiser Co., Mattawan, N. Y.

Sturtevant Co., B. F., Hyde Park, Boston, Mass.

## Fuel Oil.

Gulf Refining Co., Pittsburg, Pa.

U. S. Asphalt Refining Co., New York, N. Y.

## Furnaces. (For Industrial Purposes.)

Smythe Co., The, S. R., Pittsburgh, Pa.

## Fuses. (Electrical.)

Economy Fuse & Mfg. Co., Chicago, Ill.

## Fuse Shells. (Renewable.)

Economy Fuse & Mfg. Co., Chicago, Ill.

## Fuses, Bases and Fittings.

John-Manville Co., H. W., New York, N. Y.

## Galvanized Steel and Iron.

American Sheet & Tin Plate Co., Pittsburgh, Pa.  
La Belle Iron Works, Steubenville, O.  
McCalla, Inc., Harold, Philadelphia, Pa.

Whitaker-Glessner Co., Portsmouth Plant, Portsmouth, Ohio.

Wood Iron & Steel Co., Alan, Philadelphia, Pa.

Youngstown Sheet & Tube Co., Youngstown, O.

## Garage and House. (Portable.)

Dixie Culvert & Metal Co., Atlanta, Ga.

Steel Products Co., The, Savannah, Ga.

## Garbage Disposal Plants.

Stacy-Bates Co., Minneapolis, Minn.

## Gas Blowers. (Turbine.)

Terry Steam Turbine Co., Hartford, Conn.

## Gas Engines. [See Engines, Gas.]

## Gas Machines.

Kemp Mfg. Co., O. H., Baltimore, Md.

Milburn Co., Alex. N., Baltimore, Md.

## Gas Plants.

Gas Engineering Co., Trenton, N. J.

Power & Mining Machinery Co., Ouday, Wis.

Western Gas Construction Co., Ft. Wayne, Ind.

## Gas Producers.

Smythe Co., The, S. R., Pittsburgh, Pa.

Westinghouse Machine Co., Pittsburgh, Pa.

Wood & Co., R. D., Philadelphia, Pa.

## Gasoline and Kerosene.

Gulf Refining Co., Pittsburg, Pa.

## Gas and Steam Fitters' Tools.

Saunders' Sons, D., Tonkers, N. Y.

## Gears.

Caldwell & Son Co., H. W., Chicago, Ill.

Creson-Morris Co., Philadelphia, Pa.

James Mfg. Co., D. O., Chicago, Ill.

Jeffrey Mfg. Co., Columbus, O.

## Generating Sets.

Engberg Electric & Mechanical Works, St. Joseph, Mich.

Sturtevant Co., B. F., Hyde Park, Boston, Mass.

Triumph Electric Co., Cincinnati, O.

## Geologists.

Davis, Geo. C., Phila., Pa.

Freohling & Robertson, Richmond, Va.

Grimsley, G. P., Martinsburg, W. Va.

## Glass. (Plate, etc.)

Binswanger & Co., Memphis, Tenn.

## Governors. (Steam Engine.)

Pickering Governor Co., Portland, Conn.

## Grain Elevator Supplies.

Caldwell & Son Co., H. W., Chicago, Ill.

Jeffrey Mfg. Co., Columbus, O.

Link-Belt Co., Nictown (Philadelphia), Pa.

## Granite.

Southern Marble & Granite Co., Spartanburg, S. C.

## Graphite.

Dixon Crucible Co., Joseph, Jersey City, N. J.

## Grates and Gate Bars.

Huber Gate Bar & Stoking Co., Baltimore, Md.

Thomas Gate Bar Co., Birmingham, Ala.

## Gravel.

Arundel Sand & Gravel Co., Baltimore, Md.

Gravel. (Roofing and Road.)

American Ballast Co., Knoxville, Tenn.

## Gravity Spiral Chutes.

Mathews Gravity Carrier Co., Elwood City, Pa.

## Grease.

Albany Lubricating Co., New York, N. Y.

Lunkenheimer Co., The, Cincinnati, O.

## Greases and Lubricating Compounds.

Albany Lubricating Co., New York, N. Y.

Galena Signal Oil Co., Franklin, Pa.

Robinson & Son Co., Wm. C., Baltimore, Md.

## Grinders. (Gypsum, Limestone, etc.)

Stedman's Foundry & Machine Wks., Aurora, Ind.

## Grinding Wheels.

Carborundum Co., Niagara Falls, N. Y.

Vitrified Wheel Co., Westfield, Mass.

## Groovers.

Holter Bros. Saw Mfg. Co., Inc., Rochester, N. Y.

## Gunpowder.

Du Pont De Nemours Powder Co., E. I., Wilmington, Del.

Keystone National Powder Co., Emporium, Pa.



- Insulated Wires and Cables.**  
Safety Insulated Wire & Cable Co., New York, N. Y.
- Insulating Materials.**  
General Electric Co., Schenectady, N. Y.  
Johns-Manville Co., H. W., New York, N. Y.
- Insurance.**  
Hartford Steam Boiler Inspector & Insurance Co., Hartford, Conn.
- Investment Securities.**  
New First National Bank, Columbus, O.  
Powell, Garard & Co., Chicago, Ill.  
Provident Savings Bank & Trust Co., Cincinnati, Ohio.
- Iron.**  
Allegheny Steel Co., Pittsburgh, Pa.  
La Belle Iron Works, Steubenville, O.  
Republic Iron & Steel Co., Youngstown, O.  
Tennessee Coal, Iron & R. R. Co., Birmingham, Ala.  
Union Iron Works, Beaver Falls, Pa.  
Wood Iron & Steel Co., Alan, Philadelphia, Pa.
- Irrigation Machinery.**  
Cameron Steam Pump Wks., A. S. New York, N. Y.
- Kettles. (Steam Jacket.)**  
Badger & Sons Co., E. R., Boston, Mass.
- Lace Leather.**  
Graton & Knight Mfg. Co., Worcester, Mass.
- Lamps. (Arc and Incandescent.)**  
Boston-Economy Lamp Division, Danvers, Mass.  
General Electric Co., Schenectady, N. Y.  
Leo Electric Co., Beaver Falls, Pa.  
Piedmont Electric Co., Asheville, N. C.
- Lamps. (Carbon and Tungsten.)**  
Newman Electric Lamp Co., Cincinnati, O.
- Lamp Posts. (Electric, Gas.)**  
Western Gas Construction Co., Ft. Wayne, Ind.
- Lands. (Mineral, Timber, Farm, etc.) [See Industrial, Agricultural and Commercial Opportunities.]**
- Landscape Architects [See Engineers.] [Landscapes]**
- Lathe Attachment. (Combination)**  
Garrett Attachment Co., Nashville, Tenn.
- Lathes. (Engine.)**  
Greaves, Kiusman Tool Co., The, Cincinnati, O.
- Lawn Furniture. (Wire.)**  
Bolles Iron & Wire Works, J. E., Detroit, Mich.  
Dufur & Co., Baltimore, Md.  
Dufur, Baggott & Co., Baltimore, Md.
- Lights. (Portable Acetylene.)**  
Milburn Co., Alex. N., Baltimore, Md.
- Liquor Filters.**  
International Filter Co., Chicago, Ill.
- Lithographers, Engravers.**  
Young & Selden Co., Baltimore, Md.
- Lockers (Steel)**  
Bernstein Mfg. Co., Phila., Pa.  
Reynolds Metal Ceiling Mfg. Co., S., Pittsburgh, Pa.  
Merritt & Co., Camden, N. J.  
Van Hurlingen, J. M., Atlanta, Ga.
- Locomotives.**  
**INDUSTRIAL.**  
Baldwin Locomotive Wks., The, Philadelphia, Pa.  
Olinax Mfg. Co., Corry, Pa.  
Ourd, Geo. B., Cincinnati, O.  
Davenport Locomotive Works, Davenport, Ia.  
Fate Co., J. D., Plymouth, Ohio.  
Jeffrey Mfg. Co., Columbus, O.  
Lima Locomotive Corporation, Lima, O.  
Porter Co., H. K., Pittsburgh, Pa.  
Southern Iron & Equipment Co., Atlanta, Ga.
- RAILWAY.**  
Baldwin Locomotive Wks., The, Philadelphia, Pa.  
Lima Locomotive Corporation, Lima, O.  
Porter Co., H. K., Pittsburgh, Pa.
- Looms and Weaving Machinery.**  
Draper Co., Hopedale, Mass.  
Mason Machine Works, Taunton, Mass.  
Saco-Lowell Shops, Boston, Mass.
- Loom Harness.**  
American Supply Co., Providence, R. I.
- Lubricants.**  
Albany Lubricating Co., New York, N. Y.  
Otis Elevator Co., New York, N. Y.
- Lubricants. (Graphite.)**  
Dixon Crucible Co., Joseph, Jersey City, N. J.
- Lumber.**  
Industrial Lumber Co., Elizabeth, La.
- Lumber. (Creosote.)**  
American Creosote Works, New Orleans, La.
- Lumber. (Heavy Construction, Pitch Pine, etc.)**  
Industrial Lumber Co., Elizabeth, La.  
National Lumber & Creosote Co., Texarkana, Ark.
- Lumber Buggies.**  
Soule Steam Feed Works -Meridian, Miss.
- Lumber Stackers.**  
Soule Steam Feed Works, Meridian, Miss.
- Machinery. (Special.)**  
Bliss Co., E. W., Brooklyn, N. Y.  
Elmer, Lewis T., Alpena, Mich.  
Universal Machine Co., Baltimore, Md.
- Machinery and Supplies. (New and Second-Hand Bargains.)**  
Assets Purchasing Co., Wheeling, W. Va.  
Bailey & James Boiler & Mch. Co., Joplin, Mo.  
Birtwell, W. L., Phila., Pa.  
Boston Iron & Metal Co., Balto., Md.  
Cleveland Belting & Machinery Co., Cleveland, O.  
Dunstan & Son, New York, N. Y.  
Harris Bros. Co., Chicago, Ill.  
Erie Bros. Steel & Rail Co., Philadelphia, Pa.  
Jeffrey-Griner Machinery Co., Philadelphia, Pa.  
Lehman, Charles T., Birmingham, Ala.  
Lodge & Shipley Mach. Tool Co., Cincinnati, O.  
Marine Metal & Supply Co., New York, N. Y.  
Roore & Co., Edgar M., Pittsburgh, Pa.
- New River Co., Macdonald, W. Va.**  
Nussebaum & Co., V. M., Fort Wayne, Ind.  
Pannmuller Engineering Co., Chicago, Ill.  
Power Equipment Co., New York, N. Y.  
Prentiss Tool & Supply Co., New York, N. Y.  
Randie Machinery Co., Cincinnati, O.  
Read Co., Howard W., Philadelphia, Pa.  
Sachsenmaier & Co., George, Philadelphia, Pa.  
Samuel, Frank, Philadelphia, Pa.  
Seyfert's Sons, Inc., L. E., Philadelphia, Pa.  
Southern Mchry. Exchange, Jacksonville, Fla.  
South Side Fdry. & Mch. Co., Charleston, W. Va.  
Stearns, John C., Kansas City, Mo.  
Stewart, Paul, Cincinnati, O.  
Tampa Machinery Exchange, Tampa, Fla.  
Toomey, Frank, Inc., Philadelphia, Pa.  
Wilson Machy. Co., Harold, R., St. Louis, Mo.  
Winterer Co., Herman L., Philadelphia, Pa.
- Machine Tools.**  
Garrett Attachment Co., Nashville, Tenn.  
Greaves, Kiusman Tool Co., The, Cincinnati, O.
- Machinists. (Engineers.)**  
Universal Machine Co., Baltimore, Md.
- Magnesite Materials.**  
Johns-Manville Co., H. W., New York, N. Y.
- Magnetic Separators.**  
Buchanan & Co., Inc. C. G., New York, N. Y.
- Mail Chutes.**  
Ottier Mail-Chute Co., Rochester, N. Y.
- Mechanical Draft.**  
Buffalo Forge Co., Buffalo, N. Y.  
Sturtevant Co., B. F., Hyde Park, Boston, Mass.
- Metal Ceilings. [See Ceilings, Metal.]**
- Metaline.**  
Metaline Co., Long Island City, N. Y.
- Metal. (For Tanks, Culverts, Roofing, etc.)**  
Whitaker-Giesner Co., Portsmouth Plant, Portsmouth, Ohio.
- Metal Culverts. [See Culverts.] [Corrugated Metal.]**
- Metal Shingles. [See Shingles.] [Metal.]**
- Metal Window Frames and Sash. [See Window Frames and Sash.] [Fireproof.]**
- Metal Work. [See Sheet Metal Work.]**
- Metal-Working Machinery. (Sheet.)**  
Bliss Co., E. W., Brooklyn, N. Y.
- Meters. (Water.)**  
Alberger Pump & Condenser Co., New York, N. Y.
- Meter Boxes, Couplings, Gauges. (Water.)**  
Clark Co., H. W., Mattoon, Ill.
- Micrometers, Calipers, etc.**  
Starrett Co., L. S., Athol, Mass.
- Milk Filters. (Liquor, Milk, etc.)**  
International Filter Co., Chicago, Ill.
- Mill Engineers and Architects.**  
O'Brian, W. C., Memphis, Tenn.  
Sirrnie, J. E., Greenville, S. C.
- Mill Supplies.**  
Bailey-Lebby Co., Charleston, S. C.  
Cameron & Barkley Co., Charleston, S. C.  
Gainesville Iron Works, Gainesville, Ga.  
Lombard Iron Works, Augusta, Ga.  
Lunkenheimer Co., The, Cincinnati, O.  
Mecklenburg Iron Works, Charlotte, N. C.  
Salem Foundry & Machine Wks., Salem, Va.  
Starr Co., B. F., Baltimore, Md.  
Wolf Co., Chambersburg, Pa.
- Mining Machinery. (Gold, Copper, Plate, etc.)**  
Bartlett & Snow Co., C. O., Cleveland, O.  
Jeffrey Mfg. Co., Columbus, O.  
McLannan-Stone Mach. Co., Hollidaysburg, Pa.  
Mecklenburg Iron Works, Charlotte, N. C.  
Raymond Bros. Impact Pair Co., Chicago, Ill.
- Mixers. (Concrete.)**  
Milwaukee Concrete Mixer Co., Milwaukee, Wis.  
Standard Scale & Supply Co., Pittsburgh, Pa.  
Van Duzens, Rops Co., The, Columbus, O.
- Mixing Machinery.**  
Dunning, W. D., Syracuse, N. Y.
- Mortar Colors.**  
Chattanooga Paint Co., Chattanooga, Tenn.
- Motor Trucks. (Gasoline.)**  
White Co., The, Cleveland, O.
- Motor Trucks. (Second Hand.)**  
Mar-Del Mobile Co., Baltimore, Md.
- Municipal Castings.**  
Clarksville Fdry. & Mach. Works, Clarksville, Tenn.
- Music Wire.**  
American Steel & Wire Co., Chicago, Ill.  
Waterbury Co., The, New York, N. Y.
- Nails. (Out.)**  
La Belle Iron Works, Steubenville, O.
- Nails and Spikes.**  
La Belle Iron Works, Steubenville, Ohio.  
Republic Iron & Steel Co., Youngstown, O.  
Youngstown Sheet & Tube Co., Youngstown, O.
- Nuts. [See Bolts, Nuts, Rivets, etc.]**
- Office Furniture (Steel)**  
Merritt & Co., Camden, N. J.
- OIL. (Creosote.)**  
Barrett Mfg. Co., Philadelphia, Pa.
- Oils. (Lubricating, Etc.)**  
Albany Lubricating Co., New York, N. Y.  
Galena Signal Oil Co., Franklin, Pa.  
Gulf Refining Co., Pittsburgh, Pa.  
Robinson & Son Co., Wm. C., Baltimore, Md.
- Oil Cans.**  
Wall Mfg. Supply Co., P., Allegheny, Pa.
- Oil Engines. [See Engines (Oil).]**
- Oil Separators.**  
Stewart Heater Co., Buffalo, N. Y.
- Oil Well Machinery.**  
Keystone Steam Well Mach. Co., Beaver Falls, Pa.  
Williams Bros., Ithaca, N. Y.
- One Handling Machinery. [See Coal Handling Machinery.]**
- Ornamental Iron Works.**  
Bolles Iron & Wire Wks., J. E., Detroit, Mich.  
Chesapeake Iron Works, Baltimore, Md.  
Cincinnati Mfg. Co., Cincinnati, O.  
Dow Wire & Iron Works, Louisville, Ky.  
Ohio Elevator & Mach. Co., The, Columbus, O.  
Schrieber & Sons Co., The, Cincinnati, O.  
Snead Architectural Iron Works, Louisville, Ky.
- Oxygen.**  
International Oxygen Co., New York, N. Y.
- Oxygen Generators.**  
International Oxygen Co., New York, N. Y.
- Oxy-Acetylene Welding and Cutting Outfit and Supplies.**  
International Oxygen Co., New York, N. Y.  
Milburn Co., Alex. N., Baltimore, Md.
- Packing. (Asbestos, Metallic, Rubber, Leather, etc.)**  
Graton & Knight Mfg. Co., Worcester, Mass.  
Jenkins Bros., New York, N. Y.  
Johns-Manville Co., H. W., New York, N. Y.  
Power Specialty Co., New York, N. Y.  
United Lead Co., New York, N. Y.
- Packing. (Lead Wool.)**  
United Lead Co., New York, N. Y.
- Paint. (Cement Floors, Masonry, Stucco, etc.)**  
Cheesman & Elliott, New York, N. Y.
- Paint. (Metal Surfaces.)**  
Cheesman & Elliott, New York, N. Y.  
Dixon Crucible Co., Joseph, Jersey City, N. J.
- Paint. (Roofing, Building, etc.)**  
Cameron & Barkley Co., Charleston, S. C.  
Chattanooga Paint Co., Chattanooga, Tenn.  
Cheesman & Elliott, New York, N. Y.
- Paper. (Roofing, Building, Sheeting, etc.)**  
Barrett Mfg. Co., Philadelphia, Pa.  
Cameron & Barkley Co., Charleston, S. C.
- Partitions. (Wooden Rolling.)**  
Van Hurlingen, J. M., Atlanta, Ga.
- Patents and Inventions.**  
Russell Machine Co., F. K., Dallas, Tex.
- Patent Attorneys.**  
Brown, Eugene O., Washington, D. C.  
Chandee & Chandee, Washington, D. C.  
Coleman, Watson E., Washington, D. C.  
Duffie & Co., John S., Washington, D. C.  
Evans & Co., Victor J., Washington, D. C.  
Fitzgerald & Co., W. T., Washington, D. C.  
Hodges, Vernon E., Washington, D. C.  
Jenner, Herbert, Washington, D. C.  
Lacey, R. S. & A. H., Washington, D. C.  
McLendie, A. S., Chattanooga, Tenn.  
Parker, C. L., Washington, D. C.
- Pavement Filler.**  
Barrett Mfg. Co., Philadelphia, Pa.
- Paving Blocks. (Cresosoted.)**  
International Creosoting & Construction Co., Galveston, Tex.  
National Lumber & Creosoting Co., Texarkana, Ark.  
Republic Creosoting Co., Indianapolis, Ind.  
Southern Creosoting Co., Ltd., Slidell, La.  
Southern Wood Preserving Co., Atlanta, Ga.  
U. S. Wood Preserving Co., New York, N. Y.  
Wyckoff Pipe & Creosoting Co., Inc., The, New York, N. Y.
- Paving Blocks. (Granite.)**  
Southern Marble & Granite Co., The, Sparta, Tenn., S. C.
- Paving Brick.**  
Carlyle Paving Brick Co., Portsmouth, O.  
Copeland-Ingis Shale Brick Co., Birm'gh'm, Ala.  
Dunn Wire-Cut-Lug Brick Co., Cincinnati, Ohio.  
Southern Clay Mfg. Co., Chattanooga, Tenn.  
Standard Brick Co., Macon, Ga.
- Perforated Metal.**  
Caldwell & Son, H. W., Chicago, Ill.  
Erdle Perforating Co., Rochester, N. Y.  
Hendricks Mfg. Co., The, Carbondale, Pa.  
Manhattan Perforated Metal Co., New York, N. Y.  
Mundt & Sons, Charles, Jersey City, N. J.
- Petroleum Refiners.**  
Gulf Refining Co., Pittsburgh, Pa.  
Standard Oil Co., Inc., Newark, N. J.
- Phosphate Machinery.**  
Aising Engineering Co., J. R., New York, N. Y.  
American Process Co., New York, N. Y.  
Bailey-Lebby Co., The, Charleston, S. C.  
Cameron & Barkley Co., Charleston, S. C.  
Link Belt Co., Nicetown (Philadelphia), Pa.  
McLannan-Stone Mach. Co., Hollidaysburg, Pa.  
Raymond Impact Pair Co., Chicago, Ill.  
Valk & Murdoch Iron Works, Charleston, S. C.
- Pig Iron.**  
La Belle Iron Works, Steubenville, O.  
Republic Iron & Steel Co., Youngstown, O.  
Tennessee Coal, Iron & R. R. Co., Birm'gh'm, Ala.
- Pile Drivers.**  
Volcan Iron Works, Chicago, Ill.
- Pile Driving and Wharf Building.**  
Murray & Co., Inc., W. D., Norfolk, Va.
- Piling. (Creosoted.)**  
American Creosote Works, New Orleans, La.  
Intern'l Creosoting & Const. Co., Galveston, Tex.  
Southern Creosoting Co., Ltd., Slidell, La.
- Pillow Blocks.**  
Golden's Foundry & Machine Co., Columbus, Ga.  
Medart Patent Pulley Co., St. Louis, Mo.
- Pipe.**  
Allegheny Steel Co., Pittsburgh, Pa.  
La Belle Iron Works, Steubenville, Ohio.  
National Tube Co., Pittsburgh, Pa.  
Youngstown Sheet & Tube Co., Youngstown, O.
- Pipe. (Cast Iron.)**  
American Cast Iron Pipe Co., Birmingham, Ala.  
American Pipe & Construction Co., Phila., Pa.  
Clow & Sons, James B., Chicago, Ill.  
Donaldson Iron Co., Kansas, Pa.  
Giamorgan Pipe & Foundry Co., Lynchburg, Va.  
Greenspan's Sons Iron & Steel Co., Jos., St. Louis, Mo.  
Lynchburg Foundry Co., Lynchburg, Va.  
Macellon Iron & Steel Co., Macellon, O.  
U. S. Cast Iron Pipe & Fdry. Co., Burlington, N. J.  
Warren Fdry. & Mch. Co., New York, N. Y.  
Wood & Co., R. D., Philadelphia, Pa.
- Pipe. (Coil.)**  
Frick Co., The, Waynesboro, Pa.  
National Pipe Bending Co., New Haven, Conn.  
York Mfg. Co., York, Pa.
- Pipe. (Corrugated Culvert.) [See Culvert (Corrugated Metal).]**
- Pipe (Lead)**  
United Lead Co., New York, N. Y.
- Pipe. (Riveted.)**  
Keeler Co., E., Williamsport, Pa.
- Pipe. (Second Hand.)**  
Eagle Pipe Supply Co., New York, N. Y.  
Marine Metal & Supply Co., New York, N. Y.
- Pipe. (Spiral Riveted.)**  
American Spiral Pipe Works, Chicago, Ill.
- Pipe. (Spiral Steel.)**  
Standard Spiral Pipe Works, Chicago, Ill.
- Pipe. (Sewer, Vitrified.) [See Sewer Pipe, Vitrified.]**
- Pipe. (Wood.)**  
Wyckoff & Son Co., A., Elmira, N. Y.
- Pipe. (Wrought Iron.)**  
Youngstown Sheet & Tube Co., Youngstown, O.
- Pipe Bends.**  
Pittsburgh Valve, Fdry. & Const. Co., Pittsburgh, Pa.
- Pipe Covering. (Steam.)**  
Chesapeake Roofing & Pipe Covering Co., Baltimore, Md.  
Southern Asbestos Mfg. Co., Inc., Richmond, Va.  
Wyckoff & Son Co., A., Elmira, N. Y.
- Pipe Cutting and Threading Machinery.**  
Saunders' Sons, D., Yonkers, N. Y.
- Pipe Fittings.**  
American Cast Iron Pipe Co., Birmingham, Ala.  
Lunkenheimer Co., The, Cincinnati, O.  
Pittsburgh Valve, Fdry. & Const. Co., Pittsburgh, Pa.  
Warren Fdry. & Mach. Co., New York, N. Y.  
York Mfg. Co., York, Pa.
- Pipe Jointing. (Gas and Water Main.)**  
United Lead Co., New York, N. Y.
- Pipe Unions and Joints.**  
Dart Mfg. Co., E. M., Providence, R. I.  
National Tube Co., Pittsburgh, Pa.
- Pipe Wrenches and Cutters.**  
Saunders' Sons, D., Yonkers, N. Y.
- Piping System. (Designed and Installed.)**  
Pittsburgh Valve, Foundry & Construction Co., Pittsburgh, Pa.
- Pitch.**  
Barrett Mfg. Co., Philadelphia, Pa.
- Plaster Machinery.**  
Hartlett & Snow Co., C. O., Cleveland, O.
- Plates.**  
Allegheny Steel Co., Pittsburgh, Pa.  
Cincinnati Iron & Steel Co., Cincinnati, O.  
Wood Iron & Steel Co., Alan, Philadelphia, Pa.
- Pneumatic Tools. [See Tools-Pneumatic.]**
- Poles. (Creosoted.)**  
American Creosote Works, New Orleans, La.  
Intern'l Creosoting & Const. Co., Galveston, Tex.  
National Lumber & Creosote Co., Texarkana, Ark.  
Southern Creosoting Co., Ltd., Slidell, La.  
Southern Wood Preserving Co., Atlanta, Ga.
- Polishing Machinery. (Wheels and Blocks.)**  
Carborundum Co., Niagara Falls, N. Y.  
Vitrified Wheel Co., Westfield, Mass.
- Power Plants. (Steam and Electric.)**  
Allen-Scales Engineering Co., Nashville, Tenn.  
Assets Purchasing Co., Wheeling, W. Va.  
Gibbs Machinery Co., Inc., Columbia, S. C.
- Power Transmission Machinery.**  
Bailey-Lebby Co., Charleston, S. C.  
Caldwell & Son Co., H. W., Chicago, Ill.  
Crescon-Morris Co., Philadelphia, Pa.  
Golden's Foundry & Machine Co., Columbus, Ga.  
Jeffrey Mfg. Co., Columbus, O.  
Jones & Laughlin Steel Co., Pittsburgh, Pa.  
Lane Mfg. Co., Montpelier, Vt.  
Link-Belt Co., Nicetown (Philadelphia), Pa.  
Medart Patent Pulley Co., St. Louis, Mo.  
Schofield Iron Works, Mason, Ga.  
Smith-Connery Co., Richmond, Va.  
Wolf Co., The, Chambersburg, Pa.  
Wood's Sons, T. B., Chambersburg, Pa.
- Presses. (Rolling, Cottonseed Oil, etc. Hydraulic and Power.)**  
Boomer & Roschert Press Co., Syracuse, N. Y.  
Cardwell Machine Co., Richmond, Va.  
Continental Gin Co., Birmingham, Ala.  
French Oil Mill Mchry. Co., The, Piqua, Ohio.  
Murray Co., The, Atlanta, Ga.  
Saco-Lowell Shops, Boston, Mass.
- Presses. (Stamping.)**  
Bliss Co., E. W., Brooklyn, N. Y.  
Max Amis Machine Co., Mt. Vernon, N. Y.
- Printers. (Book, Catalog, Job, etc.)**  
Fleet-McGinley Co., Baltimore, Md.
- Promoters.**  
Electric Bond & Share Co., New York
- Pulleys. (Friction Clutch.)**  
Caldwell & Son Co., H. W., Chicago, Ill.  
Crescon-Morris Co., Philadelphia, Pa.  
Medart Patent Pulley Co., St. Louis, Mo.  
Moore & White Co., The, Philadelphia, Pa.  
Wood's Sons Co., T. B., Chambersburg, Pa.
- Pulleys. (Steel Rim.)**  
Medart Patent Pulley Co., St. Louis, Mo.
- Pulleys. (Wood Spill.)**  
Caldwell & Son Co., H. W., Chicago, Ill.  
Lane Mfg. Co., Montpelier, Vt.  
Medart Patent Pulley Co., St. Louis, Mo.  
Reeves Pulley Co., Columbus, Ind.  
Saginaw Mfg. Co., Saginaw, Mich.  
Salem Foundry & Machine Wks., Salem, Va.
- Pulleys, Shifting and Hangers.**  
Caldwell & Son Co., H. W., Chicago, Ill.  
Crescon-Morris Co., Philadelphia, Pa.  
Golden's Foundry & Mach. Co., Columbus, Ga.  
Jeffrey Mfg. Co., Columbus, O.  
Jones & Laughlin Steel Co., Pittsburgh, Pa.  
Lane Mfg. Co., Montpelier, Vt.  
Link-Belt Co., Nicetown (Philadelphia), Pa.  
Medart Patent Pulley Co., St. Louis, Mo.  
Wood's Sons Co., T. B., Chambersburg, Pa.

## CLASSIFIED INDEX OF ADVERTISEMENTS.

- Pulverizers.**  
Aising Engineering Co., J. R., New York, N. Y.  
Austin Mfg. Co., Chicago, Ill.  
Grundler Pat. Crusher & Pulv. Co., St. Louis, Mo.  
Jeffrey Mfg. Co., Columbus, O.  
McLanahan-Stone Mach. Co., Hollidaysburg, Pa.  
Raymond Bros., Impact Pulv. Co., Chicago, Ill.  
Stedman's Foundry & Machine Wks., Aurora, Ind.  
Western Wheel Scraper Co., Aurora, Ill.
- Pumping Machinery.**  
Affiliated Manufacturers Co., Milwaukee, Wis.  
Alberger Pump & Condenser Co., New York, N. Y.  
Cameron Steam Pump Wks., A. S., New York, N. Y.  
Cook, A. D., Lawrenceburg, Ind.  
Dean Bros. Steam Pump Wks., Indianapolis, Ind.  
Deane Steam Pump Co., Holyoke, Mass.  
Erie Pump & Equipment Co., Erie, Pa.  
Goulds Mfg. Co., Seneca Falls, N. Y.  
Holland Machine Co., New York, N. Y.  
Keystone Pump & Well Engine Co., Beaver Falls, Pa.  
Moffatt Machinery Mfg. Co., Charlotte, N. C.  
Morris Machine Works, Baldwinville, N. Y.  
Myers & Bros., F. E., Ashland, O.  
Wood & Co., R. D., Philadelphia, Pa.  
Worthington, Henry R., Harrison, N. J.
- Pumps. (Air.)**  
Blakeslee Mfg. Co., Du Quoin, Ill.
- Pumps. (Boiler Feed.)**  
Alberger Pump & Condenser Co., New York, N. Y.  
Blakeslee Mfg. Co., Du Quoin, Ill.  
Cameron Steam Pump Wks., A. S., New York, N. Y.  
Dean Bros. Steam Pump Wks., Indianapolis, Ind.  
Jeanville Iron Works Co., Hazelton, Pa.  
Moffatt Machinery Mfg. Co., Charlotte, N. C.  
Murray Iron Works Co., Burlington, Ia.  
Myers & Bros., F. E., Ashland, O.
- Pumps. (Centrifugal.)**  
Alberger Pump & Condenser Co., New York, N. Y.  
Buffalo Steam Pump Co., Buffalo, N. Y.  
Cameron Steam Pump Wks., A. S., New York, N. Y.  
Erie Pump & Equipment Co., Erie, Pa.  
Holland Machine Co., New York, N. Y.  
Jeanville Iron Works Co., Hazelton, Pa.  
Morris Machine Works, Baldwinville, N. Y.  
Pacific Flush Tank Co., New York, N. Y.  
Wood & Co., R. D., Philadelphia, Pa.  
Worthington, Henry R., Harrison, N. J.
- Pumps. (Deep Well.)**  
Cameron Steam Pump Wks., A. S., New York, N. Y.  
Goulds Mfg. Co., Seneca Falls, N. Y.  
Holland Machine Co., New York, N. Y.  
Keystone Pump & Well Engine Co., Beaver Falls, Pa.  
Layne & Bowler Co., Houston, Tex.
- Pumps. (Dredging.)**  
Buffalo Steam Pump Works, Buffalo, N. Y.  
Dean Bros. Steam Pump Works, Indianapolis, Ind.  
Erie Pump & Equipment Co., Erie, Pa.  
Goulds Mfg. Co., Seneca Falls, N. Y.  
Holland Mch. Co., New York, N. Y.  
Morris Machine Works, Baldwinville, N. Y.  
Wood & Co., R. D., Phila., Pa.
- Pumps. (Hydraulic.)**  
Buffalo Steam Pump Co., Buffalo, N. Y.  
Cameron Steam Pump Wks., A. S., New York, N. Y.  
Cardwell Machine Co., Richmond, Va.  
Dean Bros. Steam Pump Wks., Indianapolis, Ind.  
Erie Pump & Equipment Co., Erie, Pa.  
French Oil Mill Mch. Co., The Fiqua, O.  
Holland Mch. Co., New York, N. Y.
- Pumps. (Oil and Gasoline.)**  
Keystone Boiler & Fdry. Co., Columbia, Pa.
- Pumps. (Steam.)**  
Alberger Pump & Condenser Co., New York, N. Y.  
Blake & Knowles Steam Pump Works, East Cambridge, Mass.  
Blakeslee Mfg. Co., Du Quoin, Ill.  
Buffalo Steam Pump Co., Buffalo, N. Y.  
Cameron Steam Pump Wks., A. S., New York, N. Y.  
Cameron & Barkley Co., Charleston, S. C.  
Clayton Air Compressor Works, Cambridge, Mass.  
Cook, A. D., Lawrenceburg, Ind.  
Dean Bros. Steam Pump Wks., Indianapolis, Ind.  
Deane Steam Pump Co., Holyoke, Mass.  
Fairbanks-Morse & Co., Atlanta, Ga.  
Keystone Pump & Well Engine Co., Beaver Falls, Pa.  
Murray Iron Works Co., Burlington, Ia.  
Scranton Pump Co., Scranton, Pa.  
Snow Steam Pump Works, The New York, N. Y.  
Worthington, Henry R., Harrison, N. J.
- Pumps. (Trench.)**  
Affiliated Manufacturers Co., Milwaukee, Wis.
- Pumps. (Carbine Driven.)**  
Sturtevant Co., B. F., Hyde Park, Boston, Mass.
- Pumps. (Vacuum.)**  
Cameron Steam Pump Wks., A. S., New York, N. Y.  
Dean Bros. Steam Pump Wks., Indianapolis, Ind.
- Pumps. (Waterworks.)**  
Goulds Mfg. Co., Seneca Falls, N. Y.  
Holland Mch. Co., New York, N. Y.
- Pump Leathers.**  
Graton & Knight Mfg. Co., Worcester, Mass.
- Punching and Shearing Machinery.**  
Bliss Co., E. W., Brooklyn, N. Y.
- Purchasing Agents.**  
U. S. Purchasing Corporation, New York, N. Y.
- Racks (For Pattern Storage.)**  
Merritt & Co., Camden, N. J.
- Railroads. [See Industrial, Agricultural and Commercial Opportunities.]**
- Railroad Equipment and Supplies. (New and Second-hand.)**  
American Frog & Switch Co., Hamilton, O.  
Bailey-Lebby Co., The, Charleston, S. C.  
Birmingham Rail & Loco. Co., Birmingham, Ala.  
Cincinnati Frog & Switch Co., Cincinnati, O.  
Cord, Geo. B., Cincinnati, O.  
Fairbanks-Morse & Co., Atlanta, Ga.  
Foster Co., L. B., Pittsburgh, Pa.  
Georgia Car & Locomotive Co., Atlanta, Ga.  
Hirsch Rolling Mill Co., St. Louis, Mo.  
Hoffman & Co., Inc., R. O., Baltimore, Md.  
Hyde Bros., Pittsburgh, Pa.  
Kilby Frog & Switch Co., Birmingham, Ala.  
Macleary, J. H., Suffolk, Va.  
National Steel Rail Co., St. Louis, Mo.  
Newhall Eng. Co., Geo. M., Philadelphia, Pa.  
Read Co., Howard W., Philadelphia, Pa.  
Robinson & Orr, Pittsburgh, Pa.  
Sherwood, E. C., New York, N. Y.  
Southern Iron & Equipment Co., Atlanta, Ga.  
Steel Rail Supply Co., The, New York, N. Y.  
Thaw & Williams, Cincinnati, Ohio.  
United States Rail Co., Cumberland, Md.  
Weir Frog Co., Cincinnati, O.  
Wilson & Co., E. H., Philadelphia, Pa.  
Wilson Mach. Co., Harold R., St. Louis, Mo.  
Zelicker Supply Co., Walter A., St. Louis, Mo.
- Railroad Frogs & Switches.**  
American Frog & Switch Co., Hamilton, O.  
Cincinnati Frog & Switch Co., Cincinnati, O.  
Cordier Frog & Switch Co., Memphis, Tenn.  
Kilby Frog & Switch Co., Birmingham, Ala.  
Newhall Engineering Co., Geo. M., Philadelphia, Pa.
- Robinson & Orr, Pittsburgh, Pa.**  
Sweet's Steel Co., Williamsport, Pa.  
Weir Frog Co., Cincinnati, O.
- Rails. (Steel.)**  
Foster Co., L. B., Pittsburgh, Pa.  
Franklin, J. E., Atlanta, Ga.  
Gulf States Steel Co., Birmingham, Ala.  
Hirsch Rolling Mill Co., St. Louis, Mo.  
Hoffman & Co., Inc., R. O., Baltimore, Md.  
Hyde Bros. Steel & Rail Co., Pittsburgh, Pa.  
Hyde, Chas., Pittsburgh, Pa.  
Lackawanna Steel Co., Lackawanna, N. Y.  
Lewis & Co., Henry, Philadelphia, Pa.  
Macleary, J. H., Suffolk, Va.  
National Steel Rail Co., St. Louis, Mo.  
Newhall Eng. Co., Geo. M., Philadelphia, Pa.  
Republic Iron & Steel Co., Youngstown, O.  
Robinson & Orr, Pittsburgh, Pa.  
Sherwood, E. C., New York, N. Y.  
Southern Iron & Equipment Co., Atlanta, Ga.  
Steel Rail Supply Co., The, New York, N. Y.  
Sweet's Steel Co., Williamsport, Pa.  
Tennessee Coal, Iron & R. R. Co., Birm'gh'm, Ala.  
United States Rail Co., Cumberland, Md.  
Wilson & Co., E. H., Philadelphia, Pa.
- Rail Braces, Crossings, etc. [See R. R. Frogs and Switches.]**
- Railings and Grilles. (Brass.)**  
Newman Mfg. Co., Cincinnati, O.
- Railways. (Industrial.)**  
Chase Fdry. & Mfg. Co., Columbus, O.  
Cincinnati Frog & Switch Co., Cincinnati, O.  
Hunt Co., Inc., O. W., West New Brighton, N. Y.  
Link-Belt Co., Nicetown (Philadelphia), Pa.
- Rams. (Hydraulic.) [See Hydraulic Ram.]**
- Reamers.**  
Morse Twist Drill & Mch. Co., New Bedford, Mass.
- Reeds.**  
American Supply Co., Providence, R. I.
- Refrigerating Machinery and Apparatus.**  
Huetteman & Cramer Co., The, Detroit, Mich.  
Portsmouth Engine Co., Portsmouth, O.  
Remington Machine Co., Wilmington, Del.  
Viller Mfg. Co., Milwaukee, Wis.  
Vogt Machine Co., Henry, Louisville, Ky.  
York Mfg. Co., York, Pa.
- Reinforcing Bars. [See Concrete Reinforcing Bars.]**
- River and Harbor Improvements. (Dredges, Dock, Wharves, etc.)**  
Globe Dredging Co., Savannah, Ga.
- Road Expansion Joints.**  
Philip Carey Co., The, Cincinnati, Ohio.
- Road Machinery.**  
Austin-Western Road Mch. Co., The, Chicago, Ill.  
Buffalo Steam Roller Co., Buffalo, N. Y.  
Erie Machine Shops, Erie, Pa.  
Gallon Iron Works & Mfg. Co., The, Gallon, Ohio.  
Holt Manufacturing Co., The, Peoria, Ill.  
Kelly Springfield Road Roller Co., Springfield, O.  
The Automatic Shovel Co., Lorain, Ohio.  
Universal Road Mch. Co., Kingston, N. Y.  
Western Wheel Scraper Co., Aurora, Ill.  
Wheeling Mold & Fdry. Co., Wheeling, W. Va.
- Roadmaking Materials.**  
Barrett Mfg. Co., Philadelphia, Pa.  
Rocmac Road Corp. of America, Phila., Pa.  
Standard Oil Co., Inc., Newark, N. J.  
U. S. Asphalt Refining Co., New York, N. Y.
- Road Binders.**  
Barrett Mfg. Co., Phila., Pa.  
Standard Oil Co., Newark, N. J.  
U. S. Asphalt Refining Co., New York, N. Y.
- Road Roller. (Steam.)**  
Austin-Western Road Mch. Co., The, Chicago, Ill.  
Buffalo Steam Roller Co., Buffalo, N. Y.  
Erie Machine Shops, Erie, Pa.  
Kelly Springfield Road Roller Co., Springfield, O.  
Ohio Tractor-Roller Sales Co., Columbus, Ohio.  
Universal Road Mch. Co., Kingston, N. Y.
- Road Oil.**  
Gulf Refining Co., Pittsburgh, Pa.  
Standard Oil Co., Inc., Newark, N. J.  
U. S. Asphalt Refining Co., New York, N. Y.
- Road Preservatives.**  
Barrett Mfg. Co., Philadelphia, Pa.  
Gulf Refining Co., Pittsburgh, Pa.  
Standard Oil Co., Inc., Newark, N. J.  
U. S. Asphalt Refining Co., New York, N. Y.
- Road Scarifiers.**  
Buffalo Steam Roller Co., Buffalo, N. Y.  
Gallon Iron Works & Mfg. Co., The, Gallon, Ohio
- Rock Crushers. [See Crushers, Rock.]**
- Roller Covering Supplies.**  
American Supply Co., Providence, R. I.
- Roofing. (Ready Prepared: Felt, Tar, Asbestos, Asphalt.)**  
American Sheet & Tin Plate Co., Pittsburgh, Pa.  
Asbestos Protected Metal Co., Pittsburgh, Pa.  
Barrett Mfg. Co., Philadelphia, Pa.  
Cameron & Barkley Co., Charleston, S. C.  
Chesapeake Roofing & Pipe Covering Co., Baltimore, Md.  
Johns-Manville Co., H. W., New York, N. Y.
- Roofing. (Metal Shingles.) [See Shingles, Metal.]**  
Cortright Metal Roofing Co., Philadelphia, Pa.  
Edwards Mfg. Co., The, Cincinnati, O.
- Roofing. (Slate.)**  
East Bangor Consol. Slate Co., East Bangor, Pa.  
Genuine Bangor Slate Co., Easton, Pa.  
Johnson, E. J., New York, N. Y.
- Roofing and Siding. (Metal.)**  
American Sheet & Tin Plate Co., Pittsburgh, Pa.  
Asbestos Protected Metal Co., Pittsburgh, Pa.  
Cameron & Barkley Co., Charleston, S. C.  
Cortright Metal Roofing Co., Philadelphia, Pa.  
Edwards Mfg. Co., The, Cincinnati, O.  
Hyndman Roofing Co., Cincinnati, O.  
Southern Sheet & Tin Plate Co., Ashland, Ky.  
Steel Products Co., The, Savannah, Ga.  
Tennessee Metal Culvert Co., Nashville, Tenn.  
Whitaker-Glessner Co., Portsmouth Works, Portsmouth, Ohio.  
Youngstown Sheet & Tube Co., Youngstown, O.
- Rope. (Manila, Sisal, Hemp, etc.)**  
Broderick & Bascom Rope Co., St. Louis, Mo.  
Columbian Rope Co., Auburn, N. Y.  
Waterbury Co., New York, N. Y.  
Wood's Sons Co., T. B., Chambersburg, Pa.
- Rope. (Wire.)**  
Broderick & Bascom Rope Co., St. Louis, Mo.  
Hunt Co., Inc., O. W., West New Brighton, N. Y.  
Waterbury Co., New York, N. Y.
- Rope Drives.**  
Caldwell & Son, H. W., Chicago, Ill.  
Croscon-Morris Co., Philadelphia, Pa.  
Jones & Laughlin Steel Co., Pittsburgh, Pa.  
Medart Patent Pulley Co., St. Louis, Mo.  
Waterbury Co., New York, N. Y.  
Wood's Sons Co., T. B., Chambersburg, Pa.
- Rubber Goods.**  
Eureka Fire Hose Mfg. Co., New York, N. Y.
- Rules. (Steel.)**  
Lufkin Rule Co., Saginaw, Mich.  
Starrett Co., L. S., Athol, Mass.
- Sales and Vaults.**  
York Safe & Lock Co., York, Pa.
- Sand.**  
Arundel Sand & Gravel Co., Baltimore, Md.  
Kirkpatrick Sand & Cement Co., Birmingham, Ala.
- Sand. (Foundry.)**  
Newport Sand Bank Co., Inc., Newport, Ky.
- Sand Dryers.**  
Ripley Foundry & Mach. Co., The, Ripley, Ohio.
- Sap Stain Preventive.**  
Church & Dwight Co., New York, N. Y.
- Sash Chains.**  
Niagara Falls Metal Stamping Works, Niagara Falls, N. Y.
- Saws.**  
Gerlach Co., Peter, Cleveland, O.  
Huther Bros. Saw Mfg. Co., Inc., Rochester, N. Y.  
Smith Machine Co., H. B., Smithville, N. J.
- Saws. (Band.)**  
Smith Machine Co., H. B., Smithville, N. J.
- Saws. (Hack.)**  
Starrett Co., L. S., Athol, Mass.
- Sawmill Dogs.**  
Soule Steam Feed Works, Meridian, Miss.
- Sawmills.**  
Gainesville Iron Works, Gainesville, Ga.  
Gibbs Machinery Co., Inc., Columbia, S. C.  
Knight Mfg. Co., Canton, O.  
Lane Mfg. Co., Montpelier, Vt.
- Sawmill Machinery.**  
Bailey-Lebby Co., Charleston, S. C.  
Cameron & Barkley Co., Charleston, S. C.  
Chase Turbine Mfg. Co., Orange, Mass.  
Knight Mfg. Co., Canton, O.  
Lane Mfg. Co., Montpelier, Vt.  
Mechlenburg Iron Works, Charlotte, N. C.  
Schofield Iron Works, Macon, Ga.  
Southern Engine & Boiler Wks., Jackson, Tenn.
- Saw Sharpeners.**  
Carborundum Co., Niagara Falls, N. Y.  
Vitrified Wheel Co., Westfield, Mass.
- Saw Sharpeners and Files. (Gotton Gin.)**  
Carver Cotton Gin Co., East Bridgewater, Mass.
- Sawing Outfits. (Contractors and Industrial.)**  
Rutland Foundry & Machine Co., Bennington, Vt.
- Scales.**  
Standard Scale & Supply Co., Pittsburgh, Pa.
- Screens. (Fly, Window and Door.)**  
Cincinnati Mfg. Co., Cincinnati, O.  
New Jersey Wire Cloth Co., Trenton, N. J.
- Screens. (Mining, Stone, etc.)**  
Erie Perforating Co., Rochester, N. Y.  
Hendrick Mfg. Co., Carbondale, Pa.  
Jeffrey Mfg. Co., Columbus, O.  
McLanahan-Stone Mach. Co., Hollidaysburg, Pa.  
Mundt & Sons, Charles, Jersey City, N. J.  
New Jersey Wire Cloth Co., Trenton, N. J.
- Screenings. (For Concrete and Road Construction.)**  
American Ballast Co., Knoxville, Tenn.
- Screws. (Machine.)**  
Progressive Mfg. Co., Torrington, Conn.
- Screws. (Safety Set.)**  
Allen Manufacturing Co., Inc., Hartford, Conn.
- Screw Machine Products.**  
Progressive Mfg. Co., Torrington, Conn.
- Separators. (Dust.)**  
Buffalo Forge Co., Buffalo, N. Y.  
Raymond Bros. Impact Pulv. Co., Chicago, Ill.
- Sewer Flushing Siphons.**  
Pacific Flush Tank Co., New York, N. Y.
- Sewer Joint Compounds.**  
Pacific Flush Tank Co., New York, N. Y.
- Sewer Pipes. (Vitrified.)**  
Bannon Pipe Co., F., Louisville, Ky.  
Blackmer & Post Pipe Co., St. Louis, Mo.  
Cannelton Sewer Pipe Co., Cannelton, Ind.  
Owensboro Sewer Pipe Co., Owensboro, Ky.  
Pomona Terra-Cotta Co., Pomona, N. O.  
Southern Sewer Pipe Co., Birmingham, Ala.  
Stevens Sons Co., H., Macon, Ga.
- Sewer Pipe and Drains. (Monolithic Concrete)**  
Requarth Co., O. W., Charlotte, N. C.
- Sewer Supplies.**  
Clarksville Fdry. & Mach. Works, Clarksville, Tenn.
- Sewage Pumping and Disposal Apparatus.**  
Pacific Flush Tank Co., New York, N. Y.
- Shafting. (Cold Rolled Steel.)**  
American Steel & Wire Co., Chicago, Ill.
- Shafting. (Polished Steel.)**  
Jones & Laughlin Steel Co., Pittsburgh, Pa.  
Medart Patent Pulley Co., St. Louis, Mo.  
Pardee Works, O. Perth Amboy, N. J.  
Republic Iron & Steel Co., Youngstown, O.  
Union Drawn Steel Co., Beaver Falls, Pa.
- Shafting. [See Pulleys, Shafting and Hangers.]**
- Sharpening Stones.**  
Carborundum Co., Niagara Falls, N. Y.  
Vitrified Wheel Co., Westfield, Mass.
- Sheet. Brass and Copper.**  
McKenna Bros., Brass Co., Pittsburgh, Pa.
- Sheet Metal Work.**  
Atlas Metal Works, Dallas, Tex.  
Danner Metal Works, Hazletown, Md.  
Dixie Culvert & Metal Co., Atlanta, Ga.  
Lone Star Culvert Co., Houston, Tex.  
McMillan Bros., Jacksonville, Fla.  
Niagara Falls Metal Stamping Works, Niagara Falls, N. Y.  
Salsbury Metal Culvert Co., Salsbury, N. C.  
South Atlantic Blow Pipe & Sheet Metal Co., Savannah, Ga.  
Steel Products Co., The, Savannah, Ga.  
Tennessee Metal Culvert Co., Nashville, Tenn.  
Virginia Metal & Culvert Co., Roanoke, Va.  
Voigtman & Co., Chicago, Ill.
- Sheet Metal Working Machinery.**  
Bliss Co., E. W., Brooklyn, N. Y.
- Sheet Steel and Iron.**  
American Sheet & Tin Plate Co., Pittsburgh, Pa.  
Cincinnati Iron & Steel Co., Cincinnati, O.  
La Belle Iron Works, Steubenville, O.  
Republic Iron & Steel Co., Youngstown, O.  
Southern Sheet & Tin Plate Co., Ashland, Ky.  
Tennessee Coal, Iron & R. R. Co., Birm'gh'm, Ala.  
Whitaker-Glessner Co., Portsmouth Works, Portsmouth, Ohio.  
Wood Iron & Steel Co., Alan, Philadelphia, Pa.  
Youngstown Sheet & Tube Co., Youngstown, O.
- Shelving. [(Steel) Vanit, Store, Etc.]**  
Merritt & Co., Camden, N. J.  
Van Hurlingen, J. M., Atlanta, Ga.
- Shingles. (Metal.)**  
Cortright Metal Roofing Co., Philadelphia, Pa.  
Edwards Mfg. Co., Cincinnati, O.  
Hyndman Roofing Co., Cincinnati, O.  
Southern Sheet & Tin Plate Co., Ashland, Ky.
- Shop Furniture. (Steel.)**  
Merritt & Co., Camden, N. J.
- Shovels. (Special for Any Purpose.)**  
Conneaut Shovel Co., The, Conneaut, Ohio.
- Shovels. (Steel, Brass, Aluminum, etc.)**  
Conneaut Shovel Co., The, Conneaut, Ohio.
- Shutters. (Iron.)**  
Bolles Iron & Wire Works, J. E., Detroit, Mich.  
Chesapeake Iron Works, Baltimore, Md.
- Shutters. (Steel Rolling.)**  
Kinner Mfg. Co., Columbus, O.
- Shutters. (Tin Clad.)**  
Victor Mfg. Co., Newburyport, Mass.
- Silos. (Metal.)**  
Dixie Culvert & Metal Co., Atlanta, Ga.
- Skylights and Cornices.**  
Danner Metal Works, Hazletown, Md.
- Slate. (Roofing, Sanitary, Structural, etc.)**  
East Bangor Consol. Slate Co., East Bangor, Pa.  
Genuine Bangor Slate Co., Easton, Pa.  
Johnson, E. J., New York, N. Y.
- Sluice Gates and Appliances.**  
Oldfield-Wilcox Co., Newburgh, N. Y.
- Smokestacks. (Iron and Steel.)**  
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.  
Des Moines Bridge & Iron Co., Des Moines, Ia.  
Keeler Co., E., Williamsport, Pa.  
Lombard Iron Works, Augusta, Ga.  
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.  
Schofield Iron Works, Macon, Ga.  
Virginia Bridge & Iron Co., Roanoke, Va.
- Soda. (Bicarbonate.)**  
Church & Dwight Co., New York, N. Y.
- Speed Changes. (Variable.)**  
Moore & White Co., The, Philadelphia, Pa.
- Speed Reducing Transmissions.**  
James Mfg. Co., D. O., Chicago, Ill.
- Spikes. (Railroad.)**  
Hoffman & Co., Inc., R. C., Baltimore, Md.  
Newhall Eng. Co., Geo. M., Philadelphia, Pa.
- Spikes. [See Nails and Spikes.]**
- Spiral Stairs.**  
Merritt & Co., Camden, N. J.
- Spreaders. (Road.)**  
Troy Wagon Works Co., Troy, Ohio.
- Springs. (Machinery, Railway, Spiral.)**  
Gary Spring Works, New York, N. Y.  
Raymond Mfg. Co., Ltd., Corry, Pa.
- Stamp Mills.**  
Mechlenburg Iron Works, Charlotte, N. C.
- Stamps. (Brass, Rubber.)**  
Baltimore Office Supply Co., Baltimore, Md.
- Standpipes.**  
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.  
Chicago Bridge & Iron Works, Chicago, Ill.  
Des Moines Bridge & Iron Co., Des Moines, Ia.  
Hartley Boiler Works, Montgomery, Ala.  
Keeler Co., E., Williamsport, Pa.  
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.  
Struthers-Wells Co., Warren, Pa.
- Stapling Machinery. (Fruit Package, Basket, etc.)**  
Sarnac Machine Co., Benton Harbor, Mich.
- Stationers. (Envelopes, Letter and Bill Heads, etc.)**  
Young & Selden Co., Baltimore, Md.
- Steam Feeds.**  
Soule Steam Feed Works, Meridian, Miss.
- Steam Fitters' Supplies.**  
Saunders' Sons, D., Inc., Yonkers, N. Y.
- Steam Heating.**  
Keeler Co., E., Williamsport, Pa.
- Steamship Lines. (Coastwise.)**  
Baltimore Steam Packet Co., Baltimore, Md.  
Chesapeake Steamship Co., Baltimore, Md.  
Merchants & Miners' Trans. Co., Baltimore, Md.
- Steamship Lines. (Trans Atlantic.)**  
Cannard Steamship Co., Ltd., New York, N. Y.
- Steam Shovel Chains.**  
Weimer Chain & Iron Co., Lebanon, Pa.
- Steam Shovels.**  
American Clay Machinery Co., The, Bucyrus, Ohio.  
Fairbanks Steam Shovel Co., Marion, O.  
Keystone Drill & Equipment Co., Beaver Falls, Pa.  
Marion Steam Shovel Co., Marion, Ohio.  
Sherwood, E. C., New York, N. Y.  
The Automatic Shovel Co., Lorain, Ohio.
- Steam Specialties.**  
Lunkenshimer Co., The, Cincinnati, Ohio.  
Powell Co., Wm., Cincinnati, O.
- Steam Traps.**  
Jenkins Bros., New York, N. Y.
- Steel.**  
Dietrich Bros., Baltimore, Md.  
Gulf States Steel Co., Birmingham, Ala.  
Hendrick Mfg. Co., Carbondale, Pa.  
Hoffman & Co., Inc., R. O., Baltimore, Md.  
Jones & Laughlin Steel Co., Pittsburgh, Pa.  
La Belle Iron Works, Steubenville, O.  
Lackawanna Steel Co., Lackawanna, N. Y.  
Pardee Works, O. Perth Amboy, N. J.  
Republic Iron & Steel Co., Youngstown, O.  
Tennessee Coal, Iron & R. R. Co., Birm'gh'm, Ala.  
Union Drawn Steel Co., Beaver Falls, Pa.  
Trosen Nut Co., The, Cleveland, O.  
Whitaker-Glessner Co., Portsmouth Works, Portsmouth, Ohio.  
Wood Iron & Steel Co., Alan, Philadelphia, Pa.  
Youngstown Sheet & Tube Co., The, Youngstown, O.
- Steel. (Tool.)**  
Sourne-Fuller Co., The, Cleveland, Ohio.  
McKenna Bros., Brass Co., Pittsburgh, Pa.  
Union Drawn Steel Co., Beaver Falls, Pa.
- Steel. (Vanadium.)**  
Union Drawn Steel Co., Beaver Falls, Pa.



**Steel Buildings.** (Designers, Builders.)  
Amer. Bridge Co., of New York, N. Y.  
Belmont Iron Works, Philadelphia, Pa.  
Case Crane & Engineering Co., Columbus, Ohio.  
Champion Bridge Co., Wilmington, O.  
Chesapeake Iron Works, Baltimore, Md.  
Des Moines Bridge & Iron Co., Des Moines, Ia.  
Phoenix Iron Co., Philadelphia, Pa.  
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.  
Richmond Structural Steel Co., Richmond, Va.  
Schreiber & Sons Co., The L., Cincinnati, O.  
Snead Architectural Iron Wks., Louisville, Ky.  
Turner, O. A. F., Minneapolis, Minn.  
Virginia Bridge & Iron Co., Roanoke, Va.

**Steel Castings.**  
Gracible Steel Castings Co., Lansdowne, Pa.  
Hoffman & Co., Inc., R. O., Baltimore, Md.  
Riverside Steel Casting Co., Newark, N. J.

**Steel Plate Work.**  
Casey-Hedges Co., Chattanooga, Tenn.  
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.  
Coastville Boiler Works, Coatesville, Pa.  
Hoffman & Co., Inc., R. O., Baltimore, Md.  
Memphis Steel Construction Co., Memphis, Tenn.  
Phoenix Iron Co., Philadelphia, Pa.  
Struthers-Weiss Co., Warren, Pa.

**Steel Protector.** (Concrete Curb, Steps, etc.)  
[See Curb Protector Steel.]

**Steel Sheet Piling.**  
Frank, J. E., Atlanta, Ga.  
Jones & Laughlin Steel Co., Pittsburgh, Pa.  
Lackawanna Steel Co., Lackawanna, N. Y.

**Stencils.**  
Baltimore Office Supply Co., Baltimore, Md.

**Stills.** (Turpentine.)  
McMillan Bros., Jacksonville, Fla.

**Stirrups.** (Building.)  
Chesapeake Iron Works, Baltimore, Md.

**Stock Certificates, Bonds and Seals.**  
Baltimore Office Supply Co., Baltimore, Md.

**Stock Room Racks, Bins, Etc.**  
Merritt & Co., Camden, N. J.

**Stokers.** (Hand.)  
Huber Grate Bar & Stoking Co., Baltimore, Md.

**Stokers.** (Mechanical.)  
Babcock & Wilcox Co., New York, N. Y.  
Westinghouse Machine Co., Pittsburgh, Pa.

**Stones.** (Building.)  
Atlantic Stone Co., Atlanta, Ga.  
Bedford Steam Stone Works, Bedford, Ind.  
Eckpatrick Sand & Cement Co., Birmingham, Ala.

**Stones.** (Crushed.) [See Crushed Stone.]

**Stones and Gravel Plants.**  
Waller Mfg. Co., Chicago, Ill.

**Storage Batteries.**  
Elec. Storage Battery Co., The Philadelphia, Pa.  
Westinghouse Machine Co., Pittsburgh, Pa.

**Strapping Leather.**  
Linton & Knight Mfg. Co., Worcester, Mass.

**Structural Steel and Iron.**  
Allegheny Steel Co., Pittsburgh, Pa.  
Amer. Bridge Co. of New York, N. Y.  
Belmont Iron Works, Philadelphia, Pa.  
Bourne-Fuller Co., The, Cleveland, Ohio.  
Case Crane & Engineering Co., Columbus, Ohio.  
Champion Bridge Co., Wilmington, O.  
Chesapeake Iron Works, Baltimore, Md.  
Chicago Bridge & Iron Works, Chicago, Ill.  
Cincinnati Iron & Steel Co., Cincinnati, O.  
Des Moines Bridge & Iron Co., Des Moines, Ia.  
Detroit Bros., Baltimore, Md.  
East St. Louis Bridge Co., East St. Louis, Ill.  
Grainger & Co., Louisville, Ky.  
Greenup's Sons Iron & Steel Co., Joe., St. Louis, Mo.

**Structural Steel and Iron.**  
Hoffman & Co., Inc., R. O., Baltimore, Md.  
Jones & Laughlin Steel Co., Pittsburgh, Pa.  
Lackawanna Steel Co., Lackawanna, N. Y.  
Oregon Bridge Co., Lebanon, Ohio.  
Memphis Steel Construction Co., Memphis, Tenn.  
Phoenix Iron Co., Philadelphia, Pa.  
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.  
Republic Iron & Steel Co., Youngstown, O.  
Richmond Structural Steel Co., Richmond, Va.  
Scaife & Sons Co., Wm. B., Pittsburgh, Pa.  
Schreiber & Sons Co., The L., Cincinnati, O.  
Snead Architectural Iron Works, Louisville, Ky.  
Southern Sheet & Tin Plate Co., Ashland, Ky.  
Steel Products Co., The, Savannah, Ga.  
Tennessee Coal, Iron & R. Co., Birmingham, Ala.  
Vincennes Bridge Co., Vincennes, Ind.  
Virginia Bridge & Iron Co., Roanoke, Va.

**Stump Pullers.**  
Kimmerman Steel Co., Lone Tree, Iowa.

**Sulphur.**  
Union Sulphur Co., New York, N. Y.

**Super-Heaters.** (Steam.)  
Babcock & Wilcox Co., New York, N. Y.  
Power Specialty Co., New York, N. Y.

**Surveying Instruments.**  
Weber & Co., F., Philadelphia, Pa.

**Sweeping Compound.**  
Kilduff Co., Rome, Ga.

**Swinging Engines.**  
Dake Engine Co., Grand Haven, Mich.

**Switchboards, Switches, etc.**  
General Electric Co., Schenectady, N. Y.

**Switches.** [See Railroad Frogs and Switches.]

**Switchstands.**  
Weir Frog Co., Cincinnati, O.

**Tackle Blocks.** (For Wire or Manila Rope.)  
Broderick & Bascom Rope Co., St. Louis, Mo.

**Talc and Soapstone Powders.**  
Georgia Talc Co., Ashville, N. C.

**Tanks.** (Iron and Steel.)  
American Bridge Co., New York, N. Y.  
American Water Softener Co., Philadelphia, Pa.  
Caldwell Co., Inc., W. E., Louisville, Ky.  
Casey-Hedges Co., Chattanooga, Tenn.  
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.  
Chicago Bridge & Iron Works, Chicago, Ill.  
Coatesville Boiler Works, Coatesville, Pa.  
Cole Mfg. Co., R. D., Newnan, Ga.  
Des Moines Bridge & Iron Co., Des Moines, Ia.  
Dixie Culvert & Metal Co., Atlanta, Ga.  
Eary Bros. Co., New Orleans, La.  
Hartley Boiler Works, Montgomery, Ala.  
Hendricks Mfg. Co., Carbondale, Pa.  
Kaiser Co., E., Williamsport, Pa.  
Keystone Boiler & Foundry Co., Columbia, Pa.  
Lombard Iron Works, Augusta, Ga.  
Lokout Boiler & Mfg. Co., Chattanooga, Tenn.  
Memphis Steel Construction Co., Memphis, Tenn.  
New York Central Iron Wks. Co., Hagerstown, Md.  
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.  
Schubert Iron Works, Macon, Ga.  
Struthers-Weiss Co., Warren, Pa.  
Tennessee Metal Culvert Co., Nashville, Tenn.  
Twin City Boiler Works, Bristol, Va.-Tenn.  
Virginia Bridge & Iron Co., Roanoke, Va.  
Walsh & Weidner Boiler Co., Chattanooga, Tenn.

**Tanks.** (Wood.)  
Caldwell Co., Inc., W. E., Louisville, Ky.  
Davis & Son, G. M., Palatka, Fla.

**Tapes.** (Measuring.)  
Lufkin Rule Co., Saginaw, Mich.  
Starrett Co., L. S., Athol, Mass.

**Telephones.** (Supplies, Equipment.)  
Piedmont Electric Co., Asheville, N. C.  
Western Electric Co., New York, N. Y.

**Telephone Service.**  
American Telephone & Telegraph Co.

**Tenoner.** (Box and Crate.)  
Chase Turbine Mfg. Co., Orange, Mass.

**Terra-Cotta.** (Ornamental.)  
Atlanta Terra-Cotta Co., Atlanta, Ga.  
Pomona Terra-Cotta Co., Pomona, N. C.  
Southern Building Material Co., Norfolk, Va.  
Stevens' Sons Co., H., Macon, Ga.

**Threshers.**  
Cardwell Machine Co., Richmond, Va.

**Tiering Machines.** (Portable.)  
Economy Engineering Co., Chicago, Ill.

**Tile.** (Drain.)  
Oconee Brick & Tile Co., Milledgeville, Ga.

**Tile.** (Interior.)  
Amer. Enam. Brick & Tile Co., New York, N. Y.  
F & F Tile Co., Birmingham, Ala.

**Tile.** (Mantel and Promenade.)  
Hood Brick Co., B. Mifflin, Atlanta, Ga.

**Tile.** (Structural.)  
Oconee Brick & Tile Co., Milledgeville, Ga.

**Timbers.** (Crescoted.)  
American Crescote Works, New Orleans, La.  
Republic Crescote Co., Indianapolis, Ind.

**Tin and Terne Plates.**  
American Sheet & Tin Plate Co., Pittsburgh, Pa.

**Tobacco Machinery.**  
Backeys Iron & Brass Works, Dayton, O.  
Cardwell Machine Co., Richmond, Va.

**Transformers.**  
Crocker-Wheeler Co., Ampere, N. J.  
Triumph Electric Co., Cincinnati, O.

**Trench Excavator.** [See Excavator (Trench).]

**Trucks.** (Dry Kiln.)  
Moore Dry Kiln Co., L., Jacksonville, Fla.

**Trucks.** (Platform, Freight, Mill, Factory, etc.)  
Bernstein Mfg. Co., Phila., Pa.  
Chase Fdry. & Mfg. Co., Columbus, O.

**Trucks.** (Storage Battery Auto.)  
Westinghouse Machine Co., Pittsburgh, Pa.

**Trucks.** (Storage Battery) [For Warehouses & Industrial Plants]  
Kellwell Electric Co., The, New York, N. Y.

**Trust Companies.** [See Bankers and Brokers.]

**Tubes.** (Boiler.)  
Allegheny Steel Co., Pittsburgh, Pa.  
Cincinnati Iron & Steel Co., Cincinnati, O.  
National Tube Co., Pittsburgh, Pa.

**Tube Well Strainers.**  
Cook, A. D., Lawrenceburg, Ind.

**Tubing.**  
La Belle Iron Works, Steubenville, O.  
National Tube Co., Pittsburgh, Pa.  
Youngstown Sheet & Tube Co., Youngstown, O.

**Turbines.** (Hydraulic.)  
Allis-Chalmers Mfg. Co., Milwaukee, Wis.  
Davis Foundry & Machine Wks., Rome, Ga.  
Laffey & Co., James, Springfield, O.  
Salem Foundry & Machine Wks., Salem, Va.  
Smith Co., S. Morgan, York, Pa.

**Turbines.** (Steam.)  
Allis-Chalmers Mfg. Co., Milwaukee, Wis.  
General Electric Co., Schenectady, N. Y.  
Starveant Co., B. F., Hyde Park, Boston, Mass.  
Terry Steam Turbine Co., Hartford, Conn.  
Western Electric Co., New York, N. Y.  
Westinghouse Machine Co., Pittsburgh, Pa.

**Turn Buckles.**  
Broderick & Bascom Rope Co., St. Louis, Mo.

**Turntables.**  
American Bridge Co., New York, N. Y.  
Virginia Bridge & Iron Co., Roanoke, Va.

**Twine.**  
Columbian Rope Co., Auburn, N. Y.

## Important Information For Advertisers in Manufacturers Record

Publication day—Every Thursday.  
Advertising copy not requiring proof must reach us one week in advance of publication day.  
When proof is required, two weeks in advance.  
Width of column, 2 1/4 inches; length, 13 inches.  
Four columns to page.

### TYPOGRAPHICAL ARRANGEMENT

We desire to use, as far as possible, uniform display type and borders and avoid the use of black background cuts. The uniform border is two-point plain rule for all spaces less than a full page.

Copy for advertisements other than those to be used in special departments should be prepared for two-column measure for spaces less than a quarter page; for a quarter page or larger, in two or four columns.

#### Tools. (Machinists.)

Holland Mfg. Co., Erie, Pa.  
Morse Twist Drill & Mch. Co., New Bedford, Mass.

#### Tools. (Mechanical.)

Starrett Co., L. S., Athol, Mass.  
Chicago Pneumatic Tool Co., Chicago, Ill.

#### Tools. (Pneumatic.)

Danzer Metal Works, Hagerstown, Md.

#### Tools. (Tinners.)

Wall Mfg. Supply Co., P., Allegheny, Pa.

#### Towers.

American Bridge Co. of New York, N. Y.  
Scaife & Sons Co., Wm. B., Pittsburgh, Pa.

#### Towers. (Steel and Wood.)

Caldwell Co., Inc., W. E., Louisville, Ky.  
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.  
Chicago Bridge & Iron Works, Chicago, Ill.  
Cole Mfg. Co., R. D., Newnan, Ga.  
Columbia Pump & Well Co., Washington, D. C.  
Des Moines Bridge & Iron Co., Des Moines, Ia.  
Memphis Steel Const. Co., Memphis, Tenn.  
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.

#### Track Material. (Steam & Industrial Railroads.)

Conley Frog & Switch Co., Memphis, Tenn.  
Upon Nut Co., Cleveland, O.

#### Traction Engines.

Fairbanks-Morse & Co., Atlanta, Ga.  
Herr Engine Co., Portsmouth, Ohio.  
Holt Mfg. Co., The, Peoria, Ill.  
Ohio Tractor-Roller Sales Co., Columbus, Ohio.

#### Trailers for Trucks.

Troy Wagon Works Co., Troy, Ohio.

#### Trailers. (Motor Trucks.)

Troy Wagon Works Co., Troy, Ohio.

#### Tramway. (Overhead.)

Amburn Co. (Tramway Department), New York, N. Y.  
Spidel, J. G., Reading, Pa.

#### Tramways. (Portable.)

Amburn Co. (Tramway Department), New York, N. Y.

#### Tramway. (Wire Rope.)

Amburn Co. (Tramway Department), New York, N. Y.

American Steel & Wire Co., Chicago, Ill.  
Broderick & Bascom Rope Co., St. Louis, Mo.  
Caldwell & Sons Co., H. W., Chicago, Ill.  
Link-Belt Co., Nicetown (Philadelphia), Pa.  
Waterbury Co., New York, N. Y.

#### Unions.

Dart Mfg. Co., E. M., Providence, R. I.  
National Tube Co., Pittsburgh, Pa.

#### Upolstering Material. (For Auto's & Furniture)

Du Pont Fabrikoid Co., Wilmington, Del.

#### Vacuum Cleaning Apparatus.

King Co., F. E., Norfolk, Va.  
United Electric Co., The, Canton, O.

#### Valves.

Bourbon Copper & Brass Wks. Co., Cincinnati, O.  
Columbian Iron Works, Chattanooga, Tenn.  
Frick Co., The, Waynesboro, Pa.  
Giamorgan Pipe & Fdry Co., Lynchburg, Va.  
Jenkins Bros., New York, N. Y.  
Lunkenheimer Co., The, Cincinnati, O.  
National Tube Co., Pittsburgh, Pa.  
Powell Co., Wm., Cincinnati, O.  
Pittsburgh Valve Fdry. & Const. Co., Pittsburgh, Pa.  
York Mfg. Co., York, Pa.

#### Valve Boxes.

Clark Co., H. W., Mattoon, Ill.

#### Varnish.

Berry Bros., Detroit, Mich.

#### Vener Machine.

Titus, E. E., Petersburg, Va.

#### Ventilating Apparatus. (Engineers' and Contractors.)

Buffalo Forge Co., Buffalo, N. Y.  
Starveant Co., B. F., Hyde Park, Boston, Mass.

#### Vices.

Holland Mfg. Co., Erie, Pa.

#### Wagons. (Dump.)

Troy Wagon Works Co., The, Troy, O.  
Western Wheeled Scraper Co., Aurora, Ill.

#### Wagons. (Reversible.)

The Troy Wagon Works Co., Troy, Ohio.

#### Wall Coping.

Southern Sewer Pipe Co., Birmingham, Ala.

#### Wall Plugs. (Galvanized.)

Niagara Falls Metal Stamping Works, Niagara Falls, N. Y.

#### Wall Ties.

Niagara Falls Metal Stamping Works, Niagara Falls, N. Y.

#### Washers. (Ore and Phosphate.)

Bailey-Lobby Co., Charleston, S. C.  
Cameron & Barkley Co., Charleston, S. C.  
McLennan-Stone Wash. Co., Hollidaysburg, Pa.

#### Washers and Rivets. [See Bolts, Nuts, Rivets, Studs and Washers.]

#### Watchmen's Clocks.

Watchman's Clock & Supply Co., New York, N. Y.

#### Water Filters. (See Filters, Water, etc.)

**Waterproofing.** (For Brick Work.)  
Barrett Mfg. Co., Philadelphia, Pa.  
McDermick Waterproof Portland Cement Co., St. Louis, Mo.

#### Waterproofing. (For Concrete.)

Barrett Mfg. Co., Philadelphia, Pa.  
Johns-Manville Co., H. W., New York, N. Y.

#### Water-Softening Apparatus. (Purifying.)

American Water Softener Co., Philadelphia, Pa.  
International Filter Co., Chicago, Ill.  
N. Y. Cont. Jewell Filter Co., New York, N. Y.  
Tucker & Laxton, Charlotte, N. C.

#### Water-Wheels. [See Turbines. (Hydraulic).]

**Water-Works Construction.**  
Berry-Fortune Const. Co., Easton, Ga.

#### Water-Works Supplies and Appliances.

Allen-Scales Engineering Co., Nashville, Tenn.  
American Cast Iron Pipe Co., Birmingham, Ala.  
American Pipe & Const. Co., Philadelphia, Pa.  
Bourbon Copper & Brass Wks. Co., Cincinnati, O.  
Clark Co., H. W., Mattoon, Ill.  
Clarksville Fdry. & Mch. Works, Clarksville, Tenn.  
Clow & Sons, James R., Chicago, Ill.  
Columbian Iron Works, Chattanooga, Tenn.  
Donaldson Iron Co., Kansas, Pa.  
Giamorgan Pipe & Foundry Co., Lynchburg, Va.  
Keystone Pump & Well Engine Co., Beaver Falls, Pa.  
Layne & Bowler Co., Houston, Tex.  
Lynchburg Foundry Co., Lynchburg, Va.  
Massillon Iron & Steel Co., Massillon, Ohio.  
Pomona Terra-Cotta Co., Pomona, N. C.  
Salem Fdry. & Machine Works, Salem, Va.  
Standard Spiral Pipe Works, Chicago, Ill.  
Stevens' Sons Co., H., Macon, Ga.  
U. S. Cast Iron Pipe & Fdry. Co., Burlington, N. J.  
Warren Foundry & Machine Co., New York, N. Y.  
Wood & Co., R. D., Philadelphia, Pa.

#### Welding. (Oxy-Acetylene Process.)

Frest-O-Lite Co., Inc., The, Indianapolis, Ind.

#### Welding Plants. (Oxy-Acetylene.)

Milburn Co., Alex. N., Baltimore, Md.

#### Welding Apparatus. (Oxy-Acetylene Process.)

Frest-O-Lite Co., Inc., The, Indianapolis, Ind.

#### Welding Supplies.

Frest-O-Lite Co., Inc., The, Indianapolis, Ind.

#### Well Contractors. (Oil, Artesian, etc.)

Columbia Pump & Well Co., Washington, D. C.  
Cook, A. D., Lawrenceburg, Ind.  
Hughes Specialty Well Drill Co., Charleston, S. C.  
Stothoff Bros., Flemington, N. J.

#### Well Tools and Supplies.

Cook, A. D., Lawrenceburg, Ind.  
Keystone Pump & Well Engine Co., Beaver Falls, Pa.  
Williams Bros., Ithaca, N. Y.

#### Wheels and Axles.

Electric Wheel Co., Quincy, Ill.  
Oliver Mfg. Co., W. J., Knoxville, Tenn.

#### Wheelbarrows and Carts.

Sterling Wheelbarrow Co., Milwaukee, Wis.

#### Window Frames and Sash. (Fireproof.)

Detroit Steel Products Co., Detroit, Mich.  
Edwards Mfg. Co., The, Cincinnati, O.  
Voigtman & Co., Chicago, Ill.  
Wagner's Sons Co., J. F., Louisville, Ky.

#### Window Frame Mch.

Phillips Mfg. Co., Orlando, Fla.

#### Window Guards. (Wire.) [See Wire Goods.]

#### Windmills.

Caldwell Co., Inc., W. E., Louisville, Ky.  
Columbia Pump & Well Co., Washington, D. C.

#### Wire. (Barbed Wire, etc.)

American Steel & Wire Co., Chicago, Ill.  
Cyclone Fence Co., Waukegan, Ill.  
Kobling's Sons Co., John A., Trenton, N. J.  
Youngstown Sheet & Tube Co., Youngstown, O.

#### Wire. (Galvanized and Annealed.)

American Steel & Wire Co., Chicago, Ill.  
Gulf States Steel Co., Birmingham, Ala.

#### Wire. (Galvanized Telephone.)

American Steel & Wire Co., Chicago, Ill.  
Gulf States Steel Co., Birmingham, Ala.

#### Wire. (Plain Steel, Hoop, etc.)

Gulf States Steel Co., Birmingham, Ala.

#### Wire. (Signal.)

Safety Insulated Wire & Cable Co., New York, N. Y.

#### Wire Cloth. (Iron, Steel, Brass, etc.)

Caldwell & Sons Co., The, H. W., Chicago, Ill.  
Eureka Supply Co., Chattanooga, Tenn.  
Meyers Mfg. Co., The, Fred J., Harrison, O.  
New Jersey Wire Cloth Co., Trenton, N. J.

#### Wire Goods.

Bolles Iron & Wire Wks., J. E., Detroit, Mich.  
Cincinnati Mfg. Co., Cincinnati, O.  
Dow Wire & Iron Works, Louisville, Ky.  
Dufur & Co., Baltimore, Md.  
Dufur, Haggott & Co., Baltimore, Md.  
Meyers Mfg. Co., The, Fred J., Hamilton, O.  
New Jersey Wire Cloth Co., Trenton, N. J.

#### Wire Netting.

American Steel & Wire Co., Chicago, Ill.  
New Jersey Wire Cloth Co., Trenton, N. J.

#### Wire Rope.

American Steel & Wire Co., Chicago, Ill.  
Broderick & Bascom Rope Co., St. Louis, Mo.  
Kobling's Sons Co., John A., Trenton, N. J.  
Waterbury Co., New York, N. Y.  
Youngstown Sheet & Tube Co., Youngstown, O.

#### Wire Rope Clips.

<b>A</b> A. R. C. Dumbwaiter..... 5 Affiliated Manufacturers Co. .... 5 Albany Lubricating Co. .... 11 Alberger Pump & Condenser Co. .... 11 Allegheny Steel Co. .... 21 Allen Mfg. Co., Inc. .... 13 Allen-Scales Engineering Co. Inc. .... 17 Allis-Chalmers Mfg. Co. .... 4 Alpha Photo Engraving Co. .... 28 Alsing Engineering Co., J. R. .... 81 Aluminum Co. of America .... 6 Amburns Co. (Tramway Dept) 77 American Ballist Co. .... 26 American Blower Co. .... 23 American Bridge Co. of New York .... 68 American Cast Iron Pipe Co. .... 31 American Clay Mch. Co. .... 80 American Cotton Oil Co. .... 35 American Cresote Works .... 29 American Electric Mch. & Ele- vator Co. .... 16 American Elevator & Mch. Co. .... 16 Amer. Enam. Brick & Tile Co. .... 25 American Frog & Switch Co. .... 75 Amer. Pipe & Construc. Co. .... 33 American Process Co. .... 19 American Sheet & Tin Plate Co. .... 26 American Spiral Pipe Works .... 79 American Steel Dredge Co. .... 79 American Steel & Wire Co. .... 77 American Supply Co. of Providence, R. I. .... 35 American Telephone & Tele- graph Co. .... 4 American Water Softener Co. .... 16 Anderson & Christie .... 16 Armo Culvert Publicity Bu- road ..... 79 Arnold Co., The. .... 16 Arundel Sand & Gravel Co. .... 24 Asbestos Protected Metal Co. .... 24 Assets Purchasing Co. .... 73 Atlanta Terra Cotta Co. .... 25 Atlanta & West Point R. R. .... 80 Atlantic Engineering Co. .... 17 Atlantic Stone Co. .... 83 Atlas Machine Co. .... 15 Atlas Metal Works .... 83 Austin Mfg. Co. .... 83 Austin-Western Road Mch. Co. .... 75	<b>B</b> Babcock & Wilcox Co. .... 8 Badger & Sons Co., E. R. .... 8 Bailey & James Boiler & Mch. Co. Co. .... 2 Bailey-Lebby Co. .... 2 Bald Mountain Quarry .... 83 Baldwin Locomotive Works, The. .... 76 Ball Engine Co. .... 4 Ballenger & Ohio R. R. .... 88 Baltimore Adit Co. .... 9 Baltimore Building Co. .... 9 Baltimore Office Supply Co. .... 99 Baltimore Steam Packet Co. .... 99 Bannon Pipe Co., F. .... 32 Barnett Co., G. & H. .... 100 Barrett Mfg. Co. .... 67 Bartlett & Snow Co., O. O. .... 19 Bay City Dredge Works .... 19 Baylis, John R. .... 16 Bedford Steam Stone Works .... 25 Belmont Iron Works .... 82 Berkmans, O. P. J. .... 16 Bernstein Mfg. Co. .... 24 Berry Bros., Inc. .... 73 Bibby Hardware Co. .... 73 Binewanger & Co. .... 25 Birmingham Rail & Loco. Co. .... 74 Birtwell, W. L. .... 72 Blackmer & Post Pipe Co. .... 58 Blake & Knowles Steam Pump Works .... 1 Blakeslee Mfg. Co. .... 1 Bliss Co., E. W. .... 13 Bolinders Co. .... 5 Bolles Iron & Wire Works, J. E. .... 21 Boomer & Hochert Press Co. .... 99 Boston-Economy Lamp Divi- sion, National Lamp Works of General Elect. Co. .... 5 Boston Iron & Metal Co. .... 72 Bourbon Copper & Brass Wks. Co. .... 83 Bourne-Fuller Co. .... 72 Braun, Chas. N. .... 72 Brecht Co. .... 72 Broderick & Rascom Rope Mfg. Co. .... 34 Brown & Clarkson .... 17 Bryant, A. Glauco. .... 16 Buchanan, G. G. Co., Inc. .... 81 Buckeye Iron & Brass Works .... 35 Buffalo Forge Co. .... 100 Buffalo Steam Pump Co. .... 100 Buffalo Steam Roller Co. .... 81 Builders' Exchange, Baltimore Burruss Engineering Co. .... 35 Byers Machine Co., John F. .... 78	<b>C</b> Cabinet Mfg. Co. .... 71 Caldwell Co., Inc., W. E. .... 36 Caldwell & Son Co., H. W. .... 4 Cameron & Barkley Co. .... 100	<b>D</b> Dabney Engr. Co. .... 16 Dake Engine Co. .... 78 Danner Metal Wks. .... 78 Dart Mfg. Co., E. M. .... 83 Davenport Locomotive Works .... 76 Davis Fdry. & Mch. Works .... 36 Davis Geo. O. .... 16 Davis & Son, G. M. .... 86 Day & Zimmerman .... 16 Dean Bros. Steam Pump Wks. .... 3 Deane Steam Pump Plant .... 1 De La Vergne Mach. Co. .... 5 Delaware Trust Co. .... 63 Des Moines Bridge & Iron Co. .... 37 De Soto Hotel .... 37 Detroit Steel Products Co. .... 1 Diehl, Wm. Newton. .... 16 Districh Bros. .... 26 Dixie Culvert & Metal Co. .... 82 Dixie Portland Cement Co. .... 25 Dixon Crucible Co., Joseph. .... 100 Donaldson Iron Co. .... 32 Dow Wire & Iron Works .... 58 Draper Co. .... 38 Druid Oak Belting Co. .... 1 Duckett & Co., A. W. .... 1 Dufur, Baggett & Co. .... 24 Dufur & Co. .... 24 Dunn Wire-Out-Lug, Brick Co. .... 3 Dunning, W. D. .... 99 Du Pont Fabrikoid Co. .... 3 Du Pont Powder Co. .... 1 Dusets & Son .... 73	<b>E</b> Eagle Pipe Supply Co., Inc. .... 72 East Bangor Co., State Co. .... 7 East St. Louis Bridge Co. .... 23	<b>F</b> Fairbanks, Morse Co. .... 31 Fairbanks Steam Shovel Co. .... 60 Fate, Co., J. D. .... 76 Fernholtz Brick Mchry. Co. .... 2 Ferree Co., H. G. .... 16 Fidelity & Deposit Co. of Md. .... 63 First Nat'l Bank of Key West. .... 63 First Nat'l Bank Richmond, Va. .... 63 Florida East Coast Rwy. .... 80 Flory Mfg. Co., S. .... 78 Ford, Bacon & Davis .... 17 Foster Co., L. B. .... 74 Foster-Oreighon-Gould Co. .... 17 Franks, J. E. .... 74 Frederick Belting Co. .... 73 Freese & Co., E. M. .... 2 French Mill Mch. Co. .... 35 Frick Co. .... 16 Frothing & Robertson .... 16	<b>G</b> Gainesville Iron Works .... 34 Galena Signal Oil Co. .... 11 Gallon Iron Wks & Mfg Co. .... 83 Gandy Belting Co. .... 14 Gas Engineering Co. .... 17 Gatlin, W. R. .... 16 General Electric Co. .... 6 General Malleable Co. .... 28 General Vehicle Co. .... 2 Genuine Bangor Slate Co. .... 74 Georgia Car & Loco. Co. .... 74 Georgia Talc Co. .... 78 Gerlach Co., Peter. .... 39 Gibbs Machinery Co., Inc. .... 39 Gilman, L. Harry. .... 16 Glamorgan Pipe & Fdry. Co. .... 32 Globe Engineering Co. .... 17 Goldens' Fdry. & Mach. Co. .... 99 Goodyear Tire & Rubber Co. .... 38 Grainger & Co., Inc. .... 38 Graton & Knight Mfg. Co. .... 14 Graves Engineering Co., Inc. .... 12 Greaves, Klusman Tool Co., The. .... 12 Green Fuel Economizer Co. .... 27 Greenwood Const. Co. .... 72 Greenwood's Sons Iron & Steel Co., Inc. .... 72 Greiner & Whitman .... 16 Griffith & Wedge Co., The. .... 6 Grimsley, G. F. .... 16 Gruender, Patent Crusher & Pulverizer Co. .... 99 Gruewald, The. .... 37 Guarantee Construction Co. .... 21 Gulf Refining Co. .... 11 Gulf States Steel Co. .... 19	<b>H</b> Haines Bros. .... 74 Halsey & Co., N. W. .... 57 Harris Bros. Co., Inc. .... 72 Hartford Steam Hl. Ins. & Inc. .... 2 Hartman Cement Co., Inc. .... 14 Havely, H. B. .... 16 Hayward Co., The. .... 79 Hendrick Mfg. Co. .... 21 Hersey Mfg. Co. .... 19 Hill, Nicholas S., Jr. .... 16 Hirsch Rolling Mill Co. .... 74 Hoffman & Co., R. O. .... 75 Hogue Engineering Ass'n. .... 16 Holland Mfg. Co. .... 31 Holt Mfg. Co., Inc. .... 28 Hood Brick Co., B. Mifflin. .... 28 Houston, Stanwood & Gamble Co. .... 4 Hove Scale Co. .... 72 Howe Lumber Co. .... 74 Huber Grate Bar & Stoking Co. Inc. .... 10 Huetten & Oramer Co. .... 10 Hughes Specialty Well Drilling Co. .... 1 Hull's Sons, D. F. .... 26 Hunt Co., C. W., Inc. .... 77 Hunt & Co., Robert W. .... 19 Huther Bros. Saw Mfg. Co. Inc. .... 74 Hyde Bros. Steel & Rail Co. .... 74 Hyde, Chas. .... 74 Hydraulic Press Brick Co. .... 25 Hydramatic Roofing Co. .... 25	<b>I</b> Illinois Central Railroad Co. .... 57 India Alkali Works .... 63 Industrial Lumber Co. .... 17 Institute of Industrial Re- search .... 17 Internat'l Gravel & Const. Co. .... 29 International Filter Co. .... 29 Internat'l Oxygen Co. .... 29 International Steam Pump Co. .... 78 Interstate Construction Co. .... 16	<b>J</b> James Mfg. Co., D. O. .... 12 Jennings Iron Wks. Co. .... 16 Jefferson County Savings Bank Jeffrey Mfg. Co. .... 14 Jenny Bros. .... 100 Johns-Manville Co., H. W. .... 3 Jones, E. M. .... 16 Jones & Laughlin Steel Co. .... 26 K K. O. Elevator Mfg. Co. .... 15 Kawthra Land Co. .... 1 Keeler Co., E. .... 8 Kelley Metal Co. .... 27 Kelley, P. O. .... 16 Kelly-Springfield Road Roller Co. .... 16 Kelly, Thos. C. .... 16 Kemp Mfg. Co., O. M. .... 36 Kent, Inc., Robt. Sayre. .... 16 Keystone Boiler & Fdry. Co. .... 26 Keystone Drill Equipment Co. .... 16 Keystone Nat'l Powder Co. .... 8 Keystone Pump & Well Eng. Co. Keystone Steam Well Mch. Co. Kilby Bros. & Switch Co. .... 70 Kilgus Co. .... 15 Kilian Fire-proofing Brick Works .... 34 King Co., F. E. .... 34 Kline, Lewis & Mach. Tool Co. Kinnear Mfg. Co., The. .... 38 Kirkpatrick Sand & Cement Co. .... 19 Kiser, Dr. A. O. .... 71 Kline, Lewis & Mach. Tool Co. Knight Mfg. Co. .... 19 Knowles, Morris. .... 16 Kosmos Portland Cement Co., Inc. .... 19 L La Belle Iron Works .... 32 Lacey, R. S. & A. B. .... 63 Lackawanna Steel Co. .... 19 Laclede Steel Co. .... 19 Laidlaw-Dunn-Gordon Co. .... 1 Lane Mfg. Co. .... 1 Layne & Bowler Co. .... 30 Lee Electric Co. .... 30 Leffel & Co., James .... 16 Lehigh Portland Cement Co. .... 78 Lehman, Chas. T. .... 78 Lewis & Co., Henry. .... 74 Lever-Morton Co. .... 16 Lodge & Shipley Mach. Tool Co. Lidgerwood Mfg. Co. .... 18 Lima Locomotive Corp. .... 16 Link Belt Co. .... 1 Little, Inc., Arthur D. .... 73 Lodge & Shipley Mach. Tool Co. Lombard Iron Works .... 8 Lone Star Culvert Co. .... 83 Lookout Boiler & Mfg Co. .... 8 Louisville Fire Brick Works .... 8 Lowell Grayson Co. .... 22 Lufkin Rule Co., The. .... 22 Lunkenheimer Co., The. .... 7 Luten, Daniel B. .... 16 Lutz, Friedr. W. .... 63 Lynchburg Foundry Co. .... 32	<b>M</b> McDalla, Harold. .... 1 McCrady Bros. & Cheves, Inc. .... 16 McCrady Co., J. H. .... 17 McKenna Bros. Brass Co. .... 74 McKenna Const. Co. .... 74 McLennan-Stone Mch. Co. .... 28 McLundie, A. S. .... 29 McMillan Bros. .... 29 McNairy, J. H. .... 74 Mack & Sons, J. M. .... 71 Mallory, J. D. .... 71 Manhattan Perforated Metal Co. Mar Del Mobile Co. .... 21 Marine Metal & Sup. Co. .... 72 Marion Malleable Iron Wks. .... 28 Marion Steam Shovel Co. .... 72 Martin Co., A. J. .... 17 Maryland Terra-Cotta Co. .... 17 Mason Machine Works .... 22 Massillon Iron & Steel Co. .... 15 Mathews Gravel Carrier Co. .... 15 Mayer, J. H. .... 16 Mechlenburg Iron Works .... 38 Medart Patent Pulley Co. .... 13 Memphis Steel Const. Co. .... 63 Mercantile Trust & Dep. Co. .... 63 Merchants-Mechanics National Bank ..... 63 Merchants & Miners Transpor- tation Co. .... 28 Merritt Co. .... 28 Metaline Co., The. .... 20 Mexico Brick & Fire Clay Co. .... 20 Meyers Mfg. Co., The Fred J. .... 24 Miele, A. .... 24 Mills, J. D. .... 71 Milburn, Heister & Co. .... 16 Miller Elevator Mfg. Co., Wm. A. Miller, Hiram Allen. .... 15 Millwright Concrete Mixer Co. .... 2 Miner's Machine & Iron Co. .... 29 Moffatt Machinery Mfg. Co. .... 16 Mole, H. E. .... 16 Monaghan Machine Co. .... 80 Moore Dry Kiln Co., L. .... 29 Moore & Co., Edgar M. .... 73 Moore & White Co., The. .... 12 Moran Flexible Stm. Joint Co., Inc. .... 1 Morris Machine Works .... 71 Morrison, Jr., James .... 71 Morris Twist Drill & Mach. Co. .... 71 Mundi & Sons, Chas. .... 21 Murphy's Hotel. .... 37 Murray Co. .... 35 Murray & Co., Inc., W. D. .... 84 Myers, E. W. .... 16 Myers & Bros., F. E. .... 20	<b>N</b> Nagle Boiler & Engine Works .... 72 Nash & Sons, Inc. .... 63 National Hoisting Engine Co. .... 29 National Lumber & Creosoting Co. .... 29 National Metal Molding Co. .... 27 National Pipe Bending Co. .... 27 National Steel Rail Co. .... 74 National Tube Co. .... 83 New First National Bank .... 74 Newhall Eng. Co., Geo. M. .... 74	<b>O</b> Newman Mfg. Co. .... 1 N. J. Wire Cloth Co. .... 24 Newport Culvert Co., Inc. .... 81 Newport Sand Bank Co., Inc. .... 1 New River Co. .... 1 New York Central Iron Works New York Const. Jewell Fil. Co. .... 10 Niagara Falls Metal Stamping Works .... 25 Nicholson File Co. .... 25 Nickerson Mfg. Co. .... 25 Noble, W. Western Rwy. .... 71 Norfolk & Western Rwy. .... 71 Nussebaum & Co., V. M. .... 73 Nuveen & Co., John. .... 63	<b>P</b> P. F. F. Tile Co. .... 25 Pacific Pipe & Tank Co. .... 33 Pain & Young. .... 17 Pan Electric Mfg. Co. .... 73 Pardee Works, O. The. .... 19 Patten Mfg. Co., The. .... 19 Paulson, Linkroom & Co. .... 63 Peabody, Houghtaling & Co. .... 16 Perkins Eng. Co., Edmund T. .... 16 Pew, Arthur. .... 16 Pfeiffer Engineering Co. .... 73 Phoenix Iron Co. .... 23 Phoenix Iron Works Co. .... 28 Pickering Governor Co. .... 5 Piedmont Electric Co. .... 1 Pittsburgh-Des Moines Steel Co. .... 38 Pittsburgh Testing Laboratory. .... 16 Pittsburgh Valve Fdy. & Constr. Co. .... 83 Pomona Terra-Cotta Co. .... 25 Porter Co., H. K. .... 25 Portsmouth Engine Co. .... 10 Potter, Alexander. .... 16 Powell Co., Wm. .... 8 Powell, Garard & Co. .... 62 Power Equipment Co. .... 73 Power & Mng. Machy. Co. .... 28 Power Mfg. Co. .... 5 Power Specialty Co. .... 3 Premier Tool & Supply Co. .... 74 Prest-O-Lite Co. .... 24 Progressive Mfg. Co. .... 24 Proprietor Advt. .... 66 Provident Savings Bank & Trust Co. .... 63	<b>Q</b> Quick, Alfred M. .... 16	<b>R</b> Randie Mch. Co. .... 73 Raymond Bros. Impact Fil. Co. .... 29 Raymond Mfg. Co., Ltd. .... 100 Read Co., Howard W. .... 73 Reeves Co., The. .... 73 Reeves Pulley Co. .... 73 Remington Machine Co. .... 10 Renshaw & Broce. .... 16 Republic Croasting Co. .... 29 Republic Iron & Steel Co. .... 16 Requarth Co., O. W. .... 16 Richmond Safety Gate Co. .... 15 Richmond Structural Steel Co. .... 23 Ridgway & Son Co., The. .... 16 Roper Foundry & Machine Co. .... 8 Robins & Co., A. E. .... 8 Robinson & Orr. .... 74 Robinson & Son Co., Wm. G. .... 11 Rocmore Road Corp. .... 17 Roebbing's Sons Co. .... 17 Roper Lumber Co., John L. .... 16 Rucker, B. Parks. .... 16 Ruggles-Orion Engr. Co. .... 1 Russell Grand Mfg. Co. .... 60	<b>S</b> Sachseman & Co., Geo. .... 73 Saco-Lowell Shops .... 85 Safety Insulated Wire & Cable Co. .... 73 Saginaw Mfg. Co. .... 42 Salmon Foundry & Mch. Wks. .... 62 Salsbury Metal Cast Co. .... 62 Samuel, Frank. .... 37 San Carlos Hotel. .... 37 Saranac Mch. Co. .... 23 Saunders, Sons, Inc., D. .... 31 Savannah Eng. & Const. Co. .... 17 Scaife & Sons Co., W. B. .... 10 Scheitner Co., R. .... 73 Scherzer Roll Lift Bridge Co. .... 23 Schieren Co., Chas. A. .... 14 Schofield's Iron Wks. .... 22 Schreiber & Sons Co. .... 4 Schroeder Electric Co. .... 2 Scodell Engineering Co. .... 1 Scott Brick Co., Alex. A. .... 31 Seaboard Air Line Rwy. .... 81 Sellers & Co., Inc., Wm. .... 7 Seyfert's Sons, Inc., L. F. .... 72 Shand Engineering Co. .... 16 Shawyer, C. E. .... 74 Shawyer, E. O. .... 74 Stirling, J. E. .... 17 Smith Co., S. Morgan. .... 81 Smith-Courtney Co. .... 63 Smith, R. N. .... 71 Smith & Sons Co., H. B. .... 31 Smythe Co., S. R. .... 21 Snead Architectural Iron Wks. .... 21 Snow Steam Pump Plant .... 34 South Atlantic Blow Pipe & Sheet Metal Co. .... 57 Southern Asbestos Mfg. Co., Inc. .... 9 Southern Building Material Co. .... 27 Southern Clay Mfg. Co. .... 27 Southern Creosoting Co., Ltd. .... 29 Southern Engine & Boiler Wks. .... 4 Southern Face Brick Exchange .... 25 Southern Iron & Equipment Co. .... 74 Southern Mch. Exchange. .... 12 Southern Marble & Granite Co. .... 27 Southern Railway System. .... 57	<b>T</b> Tampa Mch. Exchange. .... 73 Taylor Co., N. & G. .... 73 Tenn. Coal, Iron & R. R. Co. .... 28 Tenn. Metal Culvert Co., The. .... 73 Terrell, R. A. .... 73 Terry Steam Turbine Co., The. .... 73 Thaw & Williams. .... 74 Thaw Automatic Shovel Co. .... 69 Thomas Graie Har Co. .... 73 Thompson & Mosley, Inc. .... 17 Titus, E. E. .... 14 Toomey, Inc., Frank. .... 73 Triumph Electric Co. .... 8 Troy Wagon Works Co. .... 8 Tucker & Laxton. .... 17 Turner, C. A. P. .... 71 Turner, Fred, W. .... 71	<b>U</b> Union Drawn Steel Co. .... 8 Union Mining Co. .... 8 Union Sulphur Co. .... 8 United Electric Co. .... 1 United Lead Co. .... 1 U. S. Asphalt Refining Co. .... 81 U. S. Cast Iron Pipe & Fdry. .... 82 U. S. Purchasing Corp. .... 1 U. S. Rail Co. .... 84 Universal Road Mch. Co. .... 81 Universal Machine Co. .... 8 Upson Nut Co. .... 8	<b>V</b> Valik & Hardeck Iron Wks. .... 8 Van Dusen Roy Co., The. .... 8 Van Harlingen, J. M. .... 8 Victor Mfg. Co. .... 8 Viller Mfg. Co. .... 8 Vincennes Bridge Co. .... 8 Virginia Bridge & Iron Co. .... 8 Virginia Metal & Culvert Co. .... 8 Virginia Rwy. & Power Co. .... 8 Vitified Wheel Co. .... 8 Votz Mch. Co., Henry. .... 8 Voigtman & Co. .... 8 Vulcan Co. .... 8 Vulcan Iron Works, Chicago. .... 8	<b>W</b> Wagner's Sons Co., J. F. .... 24 Wadco, W. .... 16 Walker Electric & Plumbing Co. .... 17 Walker Engineering Corp. .... 16 Wall Mfg. Supply Co., F. .... 13 Walsh & Walder Boiler Co. .... 1 Waraw Elevator Co. .... 16 Warren Foundry & Mach. Co. .... 30 Watchman's Clock & Supply Co. .... 60 Waterbury Co. .... 14 Weber & Co., F. .... 73 Weimer Chain & Iron Co. .... 76 Weir, Francis B. .... 73 Weir Frog Co. .... 73 Weller Mfg. Co. .... 73 Westbrook Elevator Co. .... 16 Western Electric Co. .... 7 Western Gas Const. Co. .... 16 Western Wheel Scraper Co. .... 16 Westinghouse Mch. Co. .... 16 Weston & Brooker Quarry Co. .... 73 Wheeling Mold & Fdry. Co. .... 73 Whitaker-Glessner Co. .... 26 White Co. .... 14 White, Gilbert C. .... 17 White Companies, J. G. .... 17 Whiting, Wm. S. .... 17 Whitworth Spinning Ring Co. .... 26 Wickes Bros. .... 73 Wiley & Co. .... 73 Williams Bros. .... 24 Williams Co., The G. H. .... 73 Wilson & Co., E. H. .... 74 Wilson Mch. Co., H. E. .... 74 Winter, Herman L. .... 74 Witherspoon, D. .... 74 Wolf Co., The. .... 74 Wood & Co., R. D. .... 81 Wood Iron & Steel Co., Alan. .... 81 Wood, F. A. .... 74 Wood's Sons Co., T. H. .... 74 Worthington, Henry R. .... 74 Wyckoff & Sons Co., A. .... 81	<b>Y</b> York Manufacturing Co. .... 8 York Safe & Lock Co. .... 8 Young & Seiden Co. .... 8 Youngstown Sheet & Tube Co. .... 8	<b>Z</b> Zeisler Supply Co., Walter A. .... 74 Zimmerman Steel Co. .... 74
--	---	---	--	---	---	---	--	--	--	---	--	---	--	--------------------------------------	--	---	---	---	---	--	---	--

Advt. marked \* appear every other week.  
Advt. marked † appear in first issue of the month.  
Advt. marked ‡ not in this issue.

Classified Opportunities

See Pages  
64 and 65

Proposal Advertisements

See Pages  
65 and 66



Co..... 82  
Pine Co. 18  
Penn. Co. 28  
Pine Co. 28  
Ch. Wks. 78  
Enterprise 62  
..... 18  
..... 17  
..... 22  
..... 27  
..... 27  
(N. J.) 81  
Mall Co. 28  
ment Co. 18  
ly Co. 18, 78  
Wks. 28  
..... 28  
..... 28  
..... 27  
..... 73  
h. Wks. 28  
..... 28  
..... 28  
..... 74  
..... 2  
Co. 19  
..... 100  
..... 16  
..... 16  
..... 71  
..... 36  
Corp. 17  
Forks 78  
..... 57  
..... 57  
..... 50  
..... 78

..... 78  
..... 72  
R. Co. 70  
J. The 68  
..... 71  
Co., The  
..... 74  
Co. 69  
..... 9  
Inc. 17  
..... 74  
..... 73  
..... 8  
..... 37  
..... 71

..... 8  
..... 99  
..... 1  
..... 83  
Co. 81  
A Dry  
..... 83  
..... 1  
..... 74  
Co. 81  
..... 8

Wks. 8  
The 1  
..... 80  
..... 84  
..... 80  
Co. 80  
vert Co. 81  
r Co. 88  
..... 1  
..... 84  
..... 71  
Chicago 34

F. 24  
..... 25  
bing Co. 77  
Corp. 20  
P. 13  
r Co. 8  
..... 18  
ch. Co. 80  
Supply 80  
..... 14  
..... 2  
..... 76  
Jo. 75  
..... 75  
..... 8  
..... 25  
..... 7  
..... 6  
er Co. 74  
Co. 8  
arry Co. 80  
Co. 73  
..... 20  
..... 84  
..... 70  
..... 17  
..... 1  
ting Co. 85  
..... 76  
..... 86  
..... 79  
..... 98  
..... 78  
..... 2  
..... 71  
..... 20  
..... 81  
Alan 80  
..... 71  
..... 74  
..... 2  
..... 80

..... 80  
..... 81  
..... 80  
be Co. 84

alter A 71  
..... 20

Sh  
-xart  
No  
Abol  
Th  
ole  
Ve  
Gi  
ure

BO  
386

ED

G

C

V

A



### This Press Shows the Pressure

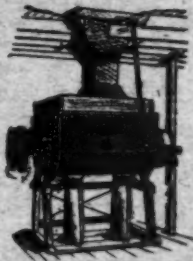
exerted at any moment.  
No guess work, but an absolute indication.  
The press is made completely of iron and steel.  
Very strong and sturdy.  
Gives tremendous pressure.



Send for illustrated catalogue.  
**BOOMER & BOSCHERT PRESS CO.**  
386 W. Water St. SYRACUSE, N. Y.

### THE BROUGHTON DRY MIXER

FOR  
Hard Plaster  
Cement  
Paint, etc.



W. D. DUNNING  
96 W. Water St.  
Syracuse, N. Y.

## CUNARD

Established 1840

### Lusitania—Mauretania—Aquitania

FASTEST PASSENGER AND MAIL SERVICE IN THE WORLD

Via Fishguard and Liverpool  
London Paris Berlin Vienna

#### SERVICES

New York to Liverpool. Boston to Liverpool. New York to Gibraltar, Genoa, Naples and Patras. Montreal to Plymouth and London.

#### INDEPENDENT ROUND THE WORLD TOURS

Special through rates to Egypt, India, China, Japan, Manila, Australia, New Zealand, South Africa and South America.

### CUNARD STEAMSHIP COMPANY, Ltd.

21-24 State Street, New York  
OFFICES AND AGENTS EVERYWHERE



### FIRE HOSE

When you choose the fire hose for your building see that you get real linen hose. You may never need it to put out a fire. The longer you have it the older and weaker it gets.

Poor quality hose deteriorates very quickly when folded and proves a delusion and a snare when the necessity for it arrives.

Eureka Linen Fire Hose is made of the best quality woven in circular form (not flat), and the weave itself is specially good for adding strength and length of service.

Fire Departments the world over use "Eureka."

That alone shows that there is more difference in hose than in the opinions of people when it comes to buying hose.

**EUREKA FIRE HOSE MFG. CO., 27-29 Barclay St., New York**

## Goldens' Foundry & Machine Co.

COLUMBUS, GEORGIA

MANUFACTURERS OF

### MACHINE MOULDED PULLEYS HANGERS SHAFTING

Couplings, Pillow Blocks, Floor Stands, Collars, Etc.

Send for Price List and Discount Sheet

### CHESAPEAKE STEAMSHIP COMPANY LINES

STEAMSHIPS DE LUXE

#### Chesapeake Line

Between Baltimore, Old Point and Norfolk, every week day, and Sundays, February 14th, 23th, March 14th, 23th.

#### York River Line

Between Baltimore, West Point, Richmond every night in the year, except Sunday night.

Our big new steamers "City of Richmond," "City of Baltimore," "City of Norfolk" and "City of Annapolis" furnish the very best accommodations. Good meals, rooms with bath and all the comforts of home.

W. H. TAYLOR, Traffic Manager.

### BALTIMORE STEAM PACKET CO.

(OLD BAY LINE)

#### PALATIAL STEEL STEAMERS

Carry U. S. Mail.

SPECIAL MEALS and a la carte service.  
RUNNING WATER and HARDWOOD FLOORS in all staterooms. MASS BEDS in double rooms and METALLIC BERTHS with BRASS MOUNTINGS and FOLDING UPPER BERTHS in single rooms; PRIVATE BATHROOMS.

While the Winter Schedule is in effect passenger steamers will leave Baltimore, Norfolk, Portsmouth and Old Point every week-day and on Sunday, January 24, February 7, 21, March 7, 21, and alternate Sundays following until further notice.

Old Bay Line tickets will be honored on the Sundays they have no steamers by the Chesapeake Line. Connections North and South for all points.

P. BYRD THOMPSON, T. M.

B. D. JORDAN, G. P. A.

## GRINDING MACHINERY

of Every Description. Complete Installations.

GRUENDLER PAT. CRUSHER & PULVERIZER COMPANY

924-928 North First Street

ST. LOUIS, MO.



Completely Equipped Foundry and Machine Shop—Improved Cotton Handling Machinery  
Steam and Gasoline Engines, Boilers, Ginning Machinery, Saw Mills and Woodworking Machinery. Gibbs Edgers, Gibbs Shingle Machines, Sling Saws, etc. Corn Mills, Brickmaking Machinery and Machinery Generally. Electric Light Plants for Municipalities, Hotels, Farms, Homes, etc. Storage Batteries.

MANUFACTURERS AND JOBBERS.

Write for Catalogs.

GIBBS MACHINERY CO., Inc.

COLUMBIA, S. C.

## UNION SULPHUR CO.

MAIN OFFICE

Whitehall Building

NEW YORK, U. S. A.

Own and Operate in Calcasieu Parish,  
Louisiana

### The Largest Sulphur Mine in the World

Absolutely Free from Arsenic or Selenium

The markets of the world are supplied through the port of Sabine Pass, Texas, and the Company has large storage facilities at Baltimore, Philadelphia, New York, Boston, Portland and Three Rivers, Canada, from which the trade can be supplied in carload lots, as required.

Producers of the Highest Grade Brimstone  
on the Market

## Sluice Gates, Flap and Shear VALVES

None Better

Few As Good

Estimates and Plans Furnished  
On Application.

Coldwell-Wilcox Co.

2 River Street  
NEWBURGH, NEW YORK





**BLACK DIAMOND FILE WORKS**  
 ESTABLISHED 1863 INCORPORATED 1885

Twelve Medals  
 Awarded  
 at International  
 Expositions.

Special Prize  
 Gold Medal  
 Atlanta  
 1895.

**G. & H. BARNETT CO.**  
 Owned and Operated by NICHOLSON FILE CO.

Philadelphia, Pa.

Our goods are on sale  
 in every leading hard-  
 ware store in the  
 United States and  
 Canada. Copy of Cata-  
 logue will be sent free  
 to any interested file user  
 on application.

**H. STEVENS' SONS CO., Macon, Ga.**  
 Manufacturers of

**Sewer and R. R. Culvert Pipe**

Fire Brick, Milled Clay Flue Pipe and Chimney Tops, Urns, &c.  
 Correspondence Solicited.

**DIXON'S BOILER GRAPHITE**

Send for "GRAPHITE FOR THE BOILER," BOOKLET 80.  
 Made in JERSEY CITY, N. J., by the

**Joseph Dixon Crucible Company**

**We are SPRING SPECIALISTS. You should know us.**

SPRINGS OF All Shapes and Styles SPRINGS OF

Flat, High Grade Machinery Springs Steel

Round and Square Wire Brass

Music Wire

Phosphor Bronze

Etc.

**Raymond Mfg. Co., Ltd., Corry, Pa.**

*The full, straight, unobstructed passage through*

**Jenkins Bros. Y or Blow-off Valves**

makes them particularly adapted for blow-off service, and they are very successfully used for a variety of other purposes, especially where *thick fluids* are handled, as in chemical, dye and fertilizer works, refineries, and other manufacturing plants. Have renewable discs and seat rings. Made in Brass or Iron, in Standard and Extra Heavy Patterns.

**JENKINS BROS.,** New York, Boston, Philadelphia, Chicago  
**JENKINS BROS., Limited,** Montreal, P. Q.; London, E. C.

**Machinery Phosphate Plumbing  
 and Mill Supplies**

**THE CAMERON & BARKLEY CO.**  
 Charleston, S. C.  
 Branch  
 Tampa, Fla.

**CARY SPRING WORKS**  
 240 and 249 West 29th St. NEW YORK, U. S. A.  
 Telephones: 3524-3528 Chelsea

Manufacturers of All kinds of Round and Flat Wire Tempered and Untempered

Springs for Machinery Rolling Shuttles Motors, Etc.

Write for Booklet and please mention this paper

Flat Spiral and Fine Springs Our Specialty

Wire Springs of Every Description

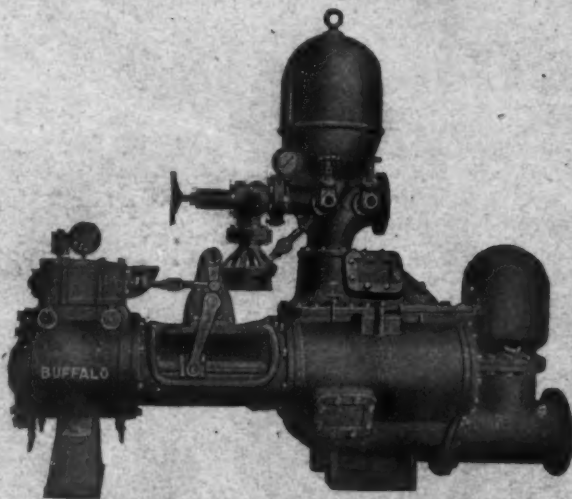
## Reliability and Durability

are the two essential features that you look for in any apparatus or system which you install to reduce your fire risk. You can be sure of protection if you specify

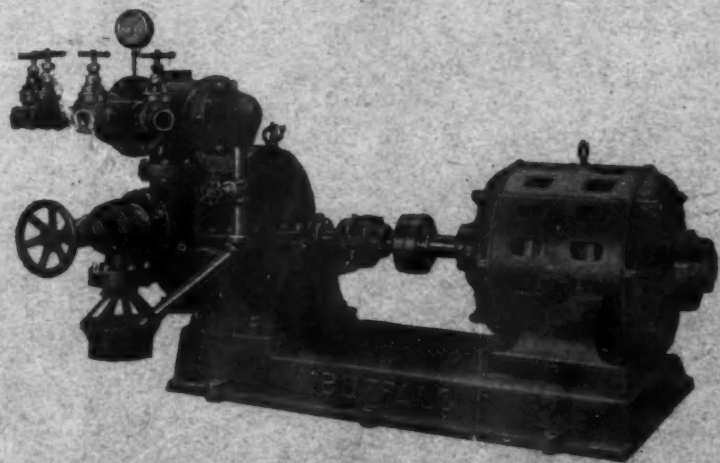
### Buffalo Underwriter Fire Pumps

STEAM AND ELECTRIC DRIVEN

Quick to start and guaranteed to deliver full capacity against working pressure at all times.



DUPLEX UNDERWRITER FIRE PUMP



CENTRIFUGAL UNDERWRITER FIRE PUMP

Buffalo Underwriter Fire Pumps are simple in design without complicated parts and are made extra heavy throughout to stand the hardest possible service.

Both types built in four standard sizes. Write now for Bulletin 242-53.

**BUFFALO STEAM PUMP COMPANY, BUFFALO, N. Y.**

NEW YORK PHILADELPHIA CHARLOTTE, N. C. ATLANTA, GA. BIRMINGHAM, ALA. HOUSTON, TEXAS

Manufacturers of Steam, Power Centrifugal Pumps and Condensers